SOAP AND CHEMICAL SPECIALTIES

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APRIL 1961

New management team of Fels & Co., Philadelphia, in new research laboratories, dedicated March 28. Left to right: Former president Cyril G. Fox, who becomes chairman; David C. Melnicoff, president; Harry J. Hughes, vice-president and general manager and Max Brown, executive vice-president.

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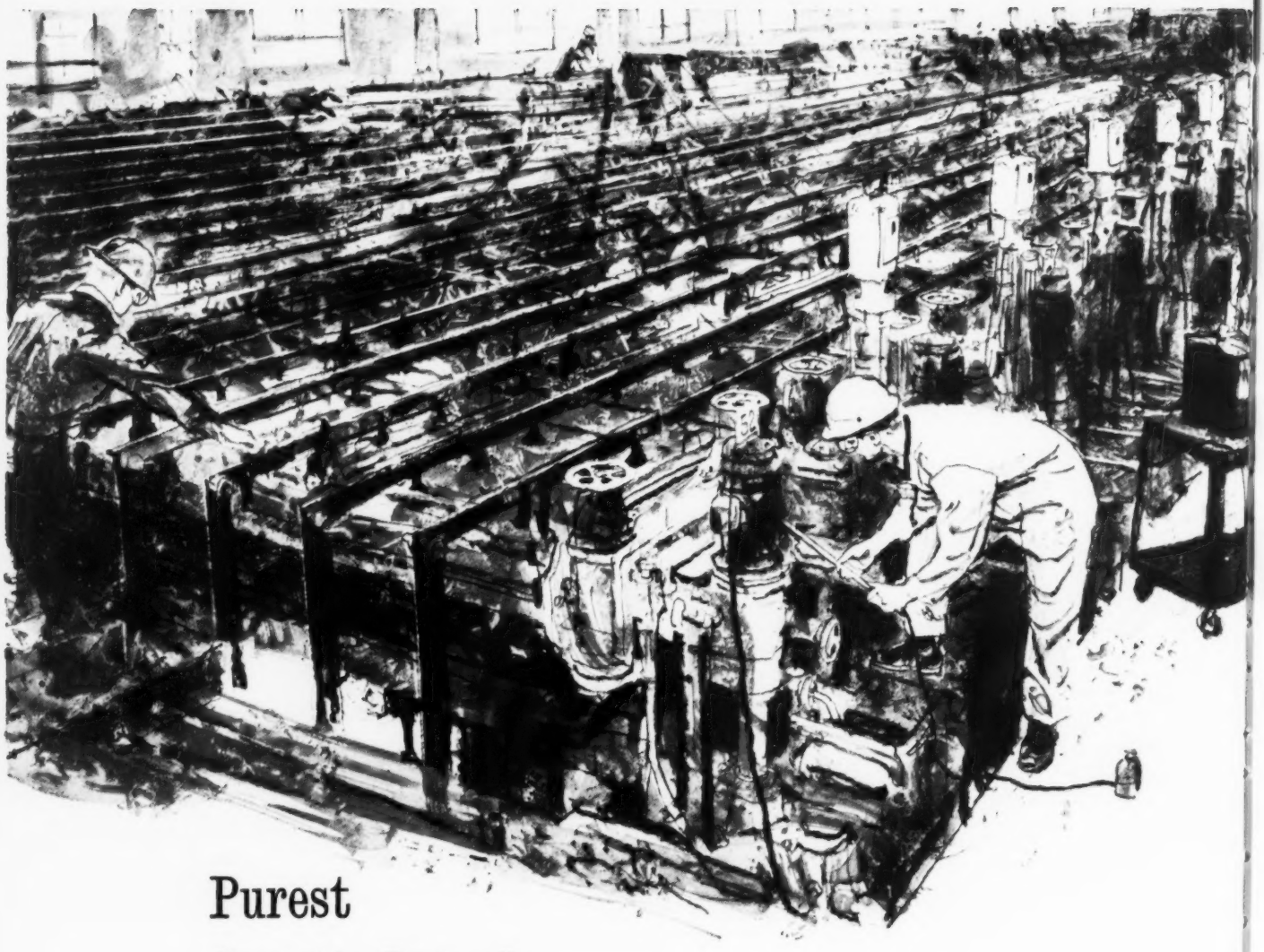

Purest Caustic Potash comes from Solvay mercury cells

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Solvay pioneered in the mercury cell technique. From row after row of complex mercury cells in Solvay's Syracuse plant comes a product that has set the industry's quality standards.

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For private brand resale buyers of waxes and kindred products

...Your Quality Guide

WATER EMULSION WAXES

Each of Candy's floor waxes are all-around top quality for certain traffic conditions. They impart the finest protection and beauty to floors for which best suited.

CANDY'S SUPREME (standard)
BRIGHT BEAUTY®
CANDY'S SUPREME Special WR
SUPER CAND-DOX®
CAND-DOX® #CS
CANDI-WAX #6000

All Candy's products are available for private brand resale and are sold only through distributors except for experimental accounts in Chicago essential to research.

Beauty and Durability

Initial appearance is important, but for a waxed surface to remain beautiful, it must be durable. Durability depends not only on resistance to abrasion of traffic, but even more so on resistance to discoloring marks. Durability should be measured by how long the waxed surface maintains a nice appearance before complete removal and re-waxing is required.

Anti-Slip

Anti-slip, or reasonable safety underfoot, does not mean that the qualities of beauty and protection need be sacrificed. The proper balance—a wax film which is not excessively slippery, yet which is not tacky and does not collect dirt readily—gives the performance that answers the foremost original reason for use of a floor wax...beauty and protection.

Water Resistance

Frequent damp mopping or wet traffic can make water resistance very important. Over-doing this quality when no problem exists out of the ordinary, simply increases the difficulty of complete removal or applying multiple coats. Removability must be considered as important as water-resistance under most normal conditions.

Solid Content

The percentage of solid content is not nearly as important as the quality of the solids. Good quality indicates 12% of solids as the answer for most well planned maintenance programs. Two applications of 12% gives better results than one of 18%. "Washed out" floors and other special problems maintain better when more concentrated waxes are used. Over-waxing and resultant greater difficulty in removal for periodic maintenance may do more harm than good.

Carnauba Wax

The most important features of a good wax...all-around quality of performance...are built around Carnauba Wax. When refined and compounded with other additives and scientifically controlled in manufacture, Carnauba alone imparts the beauty and protection that makes the use of floor waxes both profitable and possible. Make-shift manufacture or over-emphasis on any one given wax feature should be avoided and proper care taken to provide for most satisfactory performance.

Other HIGHEST QUALITY products of CANDY & COMPANY, Inc.

CANDI-COAT 1000, WATER RESIN EMULSION

As a floor coating for use under specific conditions of continued maintenance on certain types of floors this water resin emulsion has none of the faults associated with coatings of this type. It is the finest product in its class produced up to this time.

Bright Beauty WAX REMOVER & all-purpose SURFACE CLEANER

For removal of water-emulsion waxes from any floor without harmful effects. It is the perfect maintenance program wax remover and all-purpose surface cleaner. Pleasant odor, crystal clear color and thorough cleaning action with all types of equipment. Unaffected by hard freezing. Furnished ready for resale or in concentrated form for local packaging...nothing but water to buy or mix in.

Bright Beauty CREAM FURNITURE POLISH

A cream furniture polish that spreads easily, polishes without excessive effort to a deep impressive lustre. Permits *repeated repolishing* with a dry cloth, thus saving many re-applications. A very economical polish of the very highest quality.

Bright Beauty PASTE WAX

Properly blended and refined from excellent quality solids and solvents that produce the best drying time and evaporation. Easy to handle, having "creamy" consistency and stability that lasts throughout storage and usage life.

Bright Beauty LIQUID (spirit) PREPARED WAXES

A complete line of spirit dissolved waxes that meet a wide variety of demands for durability, color and types of usages. Each acts as a "dry cleaner" to keep surfaces waxed protected with a superb coating necessary for many applications such as wood and certain other types of floors; for bars, wallpaper, etc.

Bright Beauty GLASS POLISH & CLEANER and SILVER POLISH

As a glass cleaner (pink color) it applies evenly with little effort, wipes off easily with negligible "powdering" and produces an undeniable "feel" of cleanliness to glass. As a cleaner of silver, it polishes to a high lustre *without* abrasion and can even correct the abuses of scratchy "quick-polish" inferior products.

Bright Beauty DANCE FLOOR WAX

Does not "ball-up" and gather dirt that impregnates floors with hard spots difficult to remove...free from dusty effects. Its protective quality adds more "floor-years" to expensive ballroom floors.

Bright Beauty Heavy Duty PASTE CLEANER

Cleans and scours more effectively and quicker than most scouring powders. Depending on application, it can clean to perfection even painted walls to provide a suitable repainting surface. 100% active, free from excessive abrasive qualities, it frees almost every surface from all foreign matter.

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Wax Specialists for over 65 years

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Vol. XXXVII, No. 4, April, 1961

Cover photo: New officers in new laboratory of Fels & Co., Philadelphia. Newly elected officers of Fels, left to right, Cyril G. Fox, chairman of the board and former president; David C. Melnicoff, newly elected president; Harry J. Hugues, vice-president and general manager, and Max Brown, executive vice-president. New laboratories were dedicated following annual meeting at Fels offices on March 28. Robert F. X. McRae and Joseph J. Greipp, not shown, were reelected secretary and treasurer, respectively, of Fels & Co.

SOAP AND CHEMICAL SPECIALTIES

MEMBER
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SINCE 1934

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Vice-President and Treasurer

Publication Office
254 W. 31st St., New York 1, N. Y.
Telephone Bryant 9-4456

Chicago Office
612 N. Michigan Ave.

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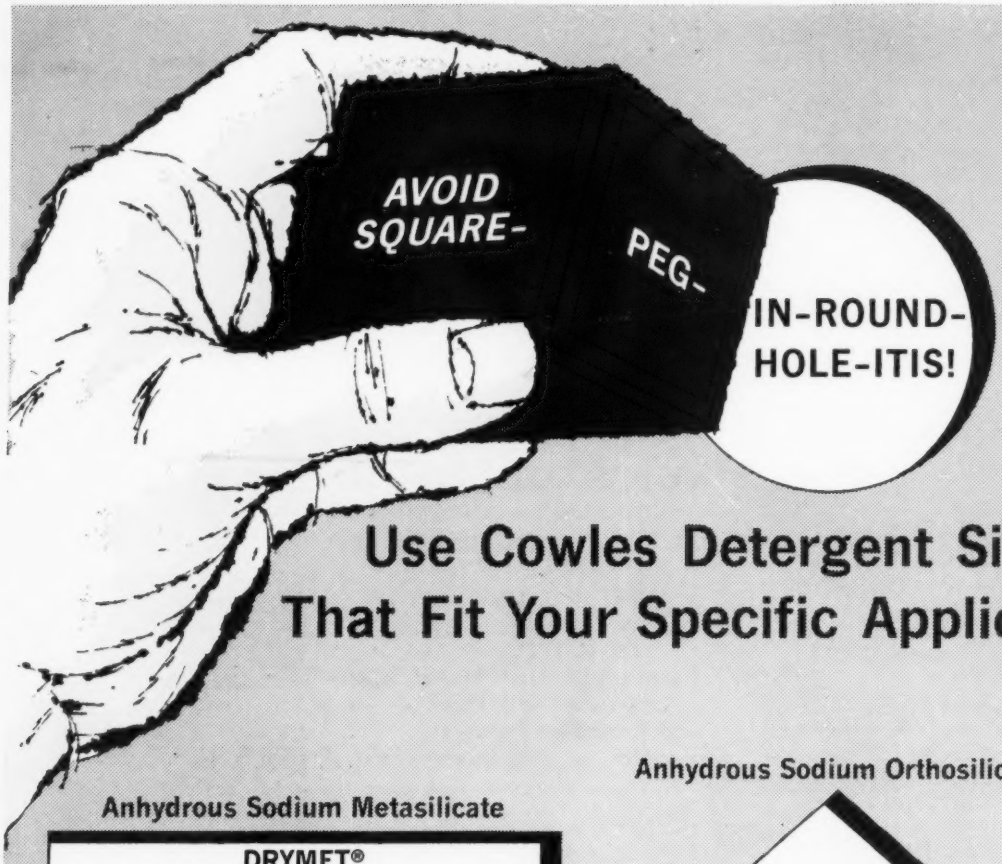
Subscription rates: U. S., $4.00 per year; Canadian, $5.00; Foreign, $11.00 (two years only). Copy closing dates—15th of month preceding month of issue for reading matter; 10th of month preceding month of issue for display advertising.

Single copies: Current issues, 50¢; all back issues, $1.00. Claims for missing copies must be received within 60 days of mailing date. Second class postage paid at New York, N. Y., and at Baltimore, Md.



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HIGH VISCOSITY. The heavy body that Ninol 1281 will give to your floor cleaning formulation will add greatly to the sales appeal (and profits) of your product.

CONTROLLED FOAM. Gives you stable suds in the bucket but not enough on the floor to interfere with rapid rinse or pickup.

LOW PENETRATION. Enough penetration to allow spreading over greasy floors but controlled so that it will not creep under or loosen tiling or leach oils out of flooring materials.

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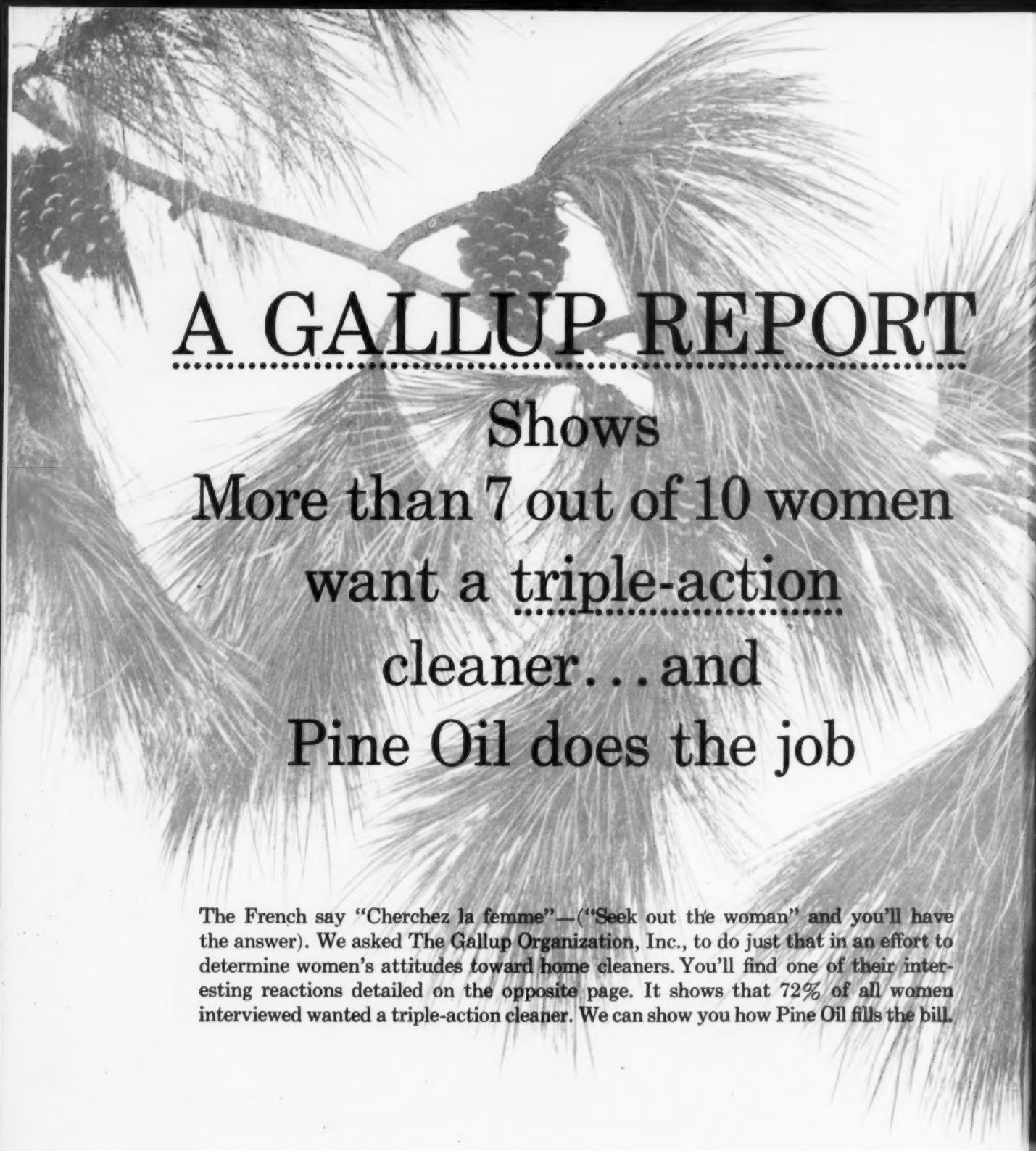

A GALLUP REPORT

Shows More than 7 out of 10 women want a triple-action cleaner... and Pine Oil does the job

The French say "Cherchez la femme"—("Seek out the woman" and you'll have the answer). We asked The Gallup Organization, Inc., to do just that in an effort to determine women's attitudes toward home cleaners. You'll find one of their interesting reactions detailed on the opposite page. It shows that 72% of all women interviewed wanted a triple-action cleaner. We can show you how Pine Oil fills the bill.

1.

CLEANING ACTION—"Ask a silly question, get a silly answer." We asked women what they wanted in a household cleaner. Of course they answered real cleaning action. As part of your formulation, Pine Oil adds a definite emulsifying action for better cleaning action. Pine Oil-based cleaners remove dirt . . . prevent its redepositing on the surface.

2.

DISINFECTANT—Today's women know that a clean *look* is not necessarily a sign of complete cleanliness. A cleaner with a high percentage of Pine Oil will kill germs of many communicable diseases. That's another reason for incorporating Pine Oil in your formulation.

3.

DEODORANT—Women want more than the knowledge that something *is* clean. They want a lingering pleasant fragrance that tells everyone else of their fastidiousness. Again Pine Oil fills the bill. A Gallup Survey reports that an overwhelming percentage of women favor the odor of pine.

Naval Stores Department

HERCULES POWDER COMPANY

INCORPORATED

Hercules Tower, 910 Market Street, Wilmington 99, Delaware

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HARDWORKING JEFFERSON CHEMICALS

ETHYLENE OX

Ethylene Oxide and Propylene Oxide provide a better way to separate oil and water

Millions of barrels of crude oil come to the surface in the form of annoyingly stable water-in-oil emulsions. Obviously, you'd never attempt to separate commercial quantities of oil from water with a simple laboratory centrifuge.

There's a better way . . . petroleum demulsifiers, formulated with ethylene oxide and propylene oxide, separate crude oil from water for a fraction of a cent per barrel. Most petroleum demulsifiers are mixtures of highly complex organic compounds. Ethylene oxide and propylene oxide are added to the basic demulsifier nucleus to achieve desired surface-active properties. The ratios of these oxides are varied to adjust the hydrophobe-hydrophile balance. The molecules are then modified to satisfy individual requirements.

Such custom building of molecules with ethylene oxide and propylene oxide is an established practice. For example, detergent manufacturers react fatty acids, fatty alcohols, fatty amines, and alkylated phenols with ethylene oxide to form polyoxyethylated derivatives which are employed as detergents, dispersants, stabilizers, and emulsifiers.

And propylene oxide finds extensive use in formulating polyether diols and triols for the growing polyurethane industry.

Jefferson is interested in any program involving these oxides . . . let our technical service people help you.

IDE and PROPYLENE OXIDE

ETHYLENE OXIDE

SPECIFICATIONS

Water, wt.%	0.03 max.
Aldehyde as acetaldehyde, wt.%	0.010 max.
Acidity as acetic, wt.%	0.002 max.
Non-volatile residue, gms./100 ml.	0.010 max.
Residual odor	None
Color	Water-white
Inorganic chloride as Cl	Nil
Acetylene	Nil

SELECT PROPERTIES

Boiling point, 760 mm.	10.73°C.
Explosive limits in air by volume	3-100%
Flash point (open cup)	<0°F.
Specific gravity, 20/20°C.	0.8711
Specific heat (liquid)	0.44 cal./gm./°C.
Weight, 20°C	7.25 lbs./gal.

PROPYLENE OXIDE

SPECIFICATIONS

Specific gravity, 20/20°C.	0.829 min. 0.831 max.
Acidity as acetic, wt.%	0.005 max.
Water, wt.%	0.10 max.
Color, Pt-Co scale	10 max.
Residual odor	None
Aldehyde as propionaldehyde, wt.%	0.05 max.
Boiling range, ASTM, °C.	33.0-37.0

SELECT PROPERTIES

Boiling point, 760 mm.	34.1°C.
Explosive limits in air by volume	2.1-38.5%
Flash point (open cup)	—35°F.
Specific gravity, 20/20°C.	0.8305
Specific heat (liquid)	0.51 cal./gm./°C.
Weight, 20°C.	6.92 lbs./gal.

SHIPPING AND HANDLING

Ethylene oxide and propylene oxide are available from Jefferson in 10,000-, 6,000-, and 4,000-gal. tank cars (I.C.C. Spec. 105-A-100-W) and E. O. in 400-lb. net drums (I.C.C. Spec. 5P), P. O. in 370-lb. net drums (I.C.C. Spec. 17C) . . . red labels required.

Both ethylene oxide and propylene oxide represent a potential hazard in handling and storage. All equipment including piping, storage tanks and relief valves used in the handling of these oxides should be of carbon steel or stainless steel and with a minimum working pressure of 50 psig. Complete methods of handling and precautionary measures are available from our technical service people . . . let them assist you in any phase of your oxide program.

TECHNICAL INFORMATION

For detailed specifications, applications, storage, handling and bibliography on ethylene oxide and propylene oxide, request the respective Technical Brochures. Also, comprehensive literature surveys on these two oxides are yours for the asking . . . Jefferson Chemical Company, Inc., 1121 Walker Avenue, P. O. Box 303, Houston 1, Texas.

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That's because Pilot ABS-99 is 98% pure—so pure, in fact, that it may be kept in *plain steel* containers!

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PART OF THEIR "SPARKLE" COMES FROM STEARIC ACID!

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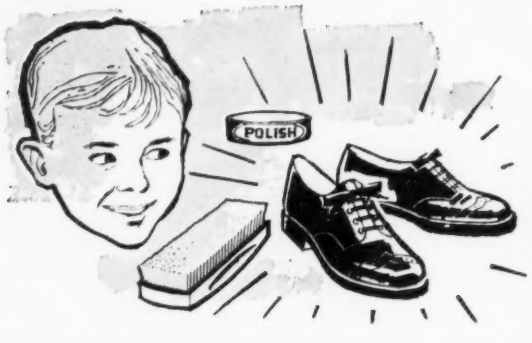
Stearic Acid, used as a fine coating in photographic flashbulbs, helps increase their brilliance. Stearic and other fatty acids are also used as ingredients or in the manufacture of camera film, cameras, and film packages.

THEY'RE SHINY NEW AGAIN -THANKS TO OLEIC ACID!



Oleic Acid is commonly used as the base in the preparation of saddle soaps, shoe polishes and leather dressings. Fatty acid derivatives have a wide application in the leather industry, both during manufacture and in the preservation and care of fabricated leather products.

Below are facts you should know about two Fatty Acids produced by A. Gross. Why not write for samples and additional information on the Fatty Acids we produce. Send for the latest edition of the brochure "Fatty Acids in Modern Industry." Address Dept. S-2.

	HYDROGENATED TALLOW F.A. GROCO 58	WHITE OLEINE GROCO 5L LOW LINOLEIC
Titre	58° – 60°C.	2° – 5°C.
Titre	136.5° – 140.0°F.	36° – 41°F.
Color 5¼" Lovibond Red	1.0 max.	1 max.
Color 5¼" Lovibond Yellow	5 max.	8 max.
Color Gardner 1933		2 max.
Unsaponifiable	0.75% max.	1.0% max.
Saponification Value	204 – 207	201 – 206
Acid Value	203 – 206	200 – 205
% F.F.A. as Oleic Acid		99.5 min.
Iodine Value (WIJS)	2.0 max.	90 max.
Refractive Index 50°C. (Av.)		1.4490
Total Polyunsaturated F.A.		3.5% max.

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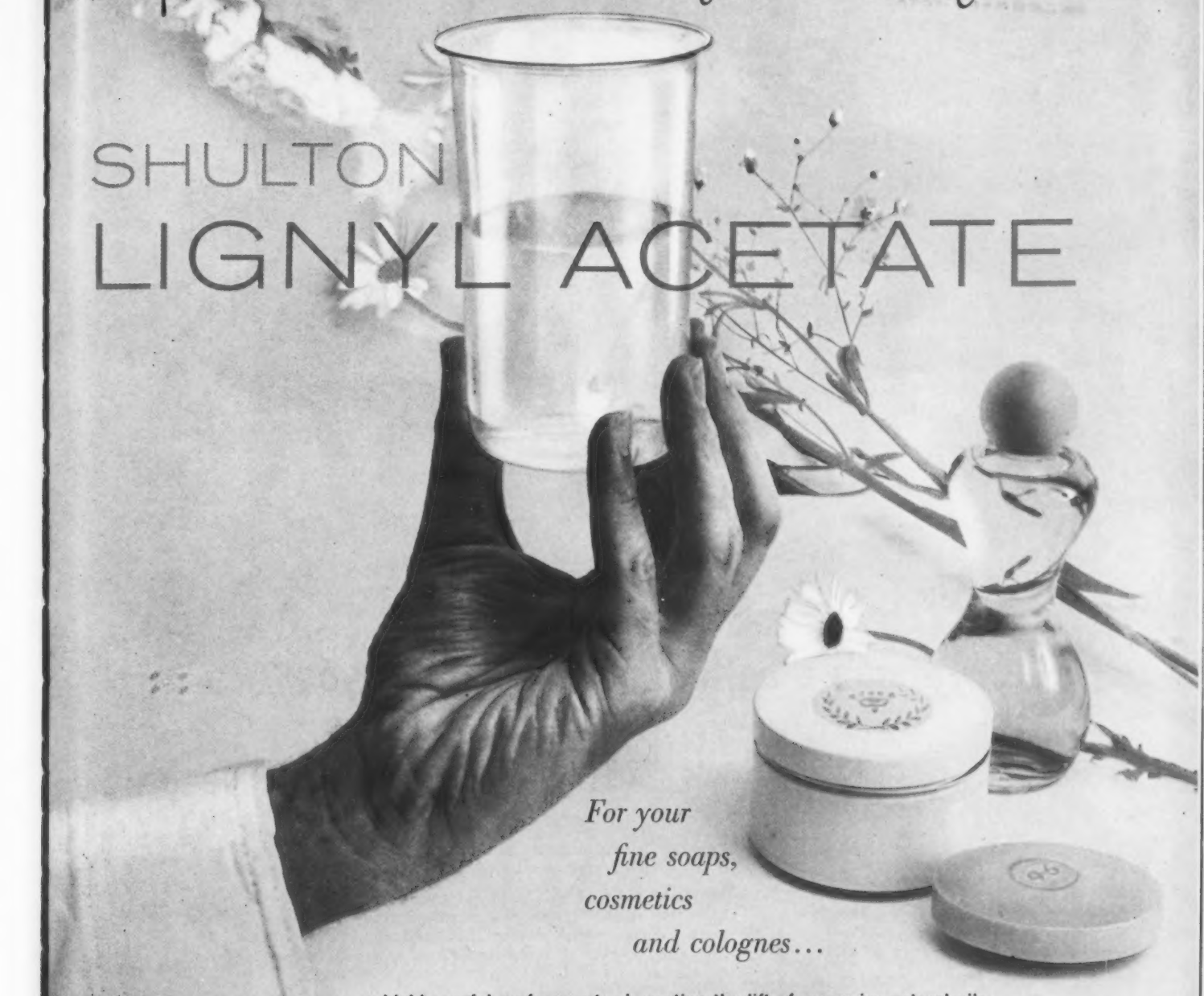

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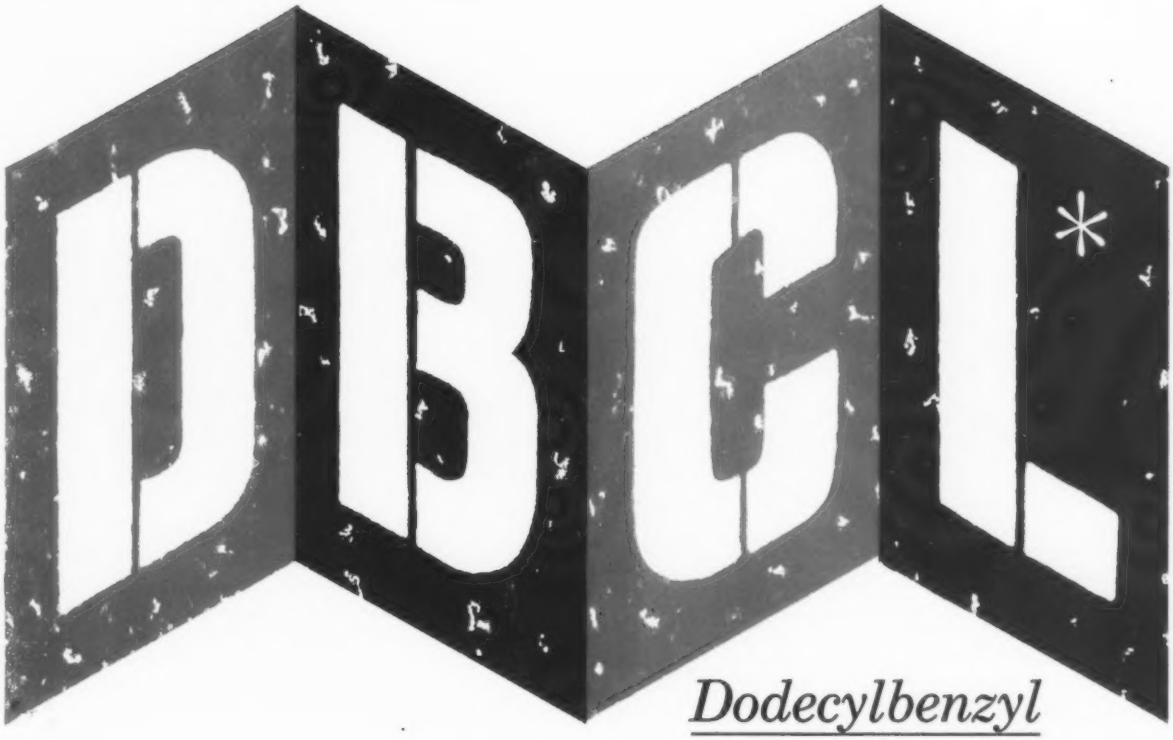

Dodecylbenzyl chloride technical grade . . . the intermediate for cationic surface active agents

***TYPICAL PHYSICAL PROPERTIES**

Specific Gravity at 60°F	0.965
Apparent Molecular Weight	292
Activity	Approx. 95%
Minimum Activity	90%
Flash Point (C.O.C.)	355°F.
Viscosity S.U.S. at 100°F	105
Pour Point	Less than −5°C.

CONOCO

For chemicals with a head start on the future . . . count on CONOCO!

CONOCO DBCL reacts with tertiary amines to form cationic surface-active agents—known chemically as "quaternary ammonium salts." Quaternaries are used as the active ingredients in sanitizer preparations, as textile softeners, and as antistatic agents for fibers, plastics, and paper. Nonionic surface-active agents may also be made by reacting CONOCO DBCL with the appropriate polyglycol.

For samples and further information, just send a request on your letterhead.

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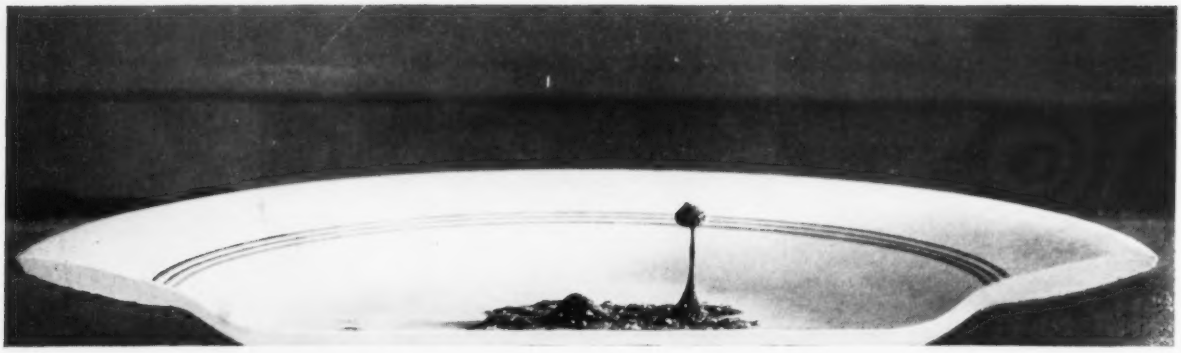
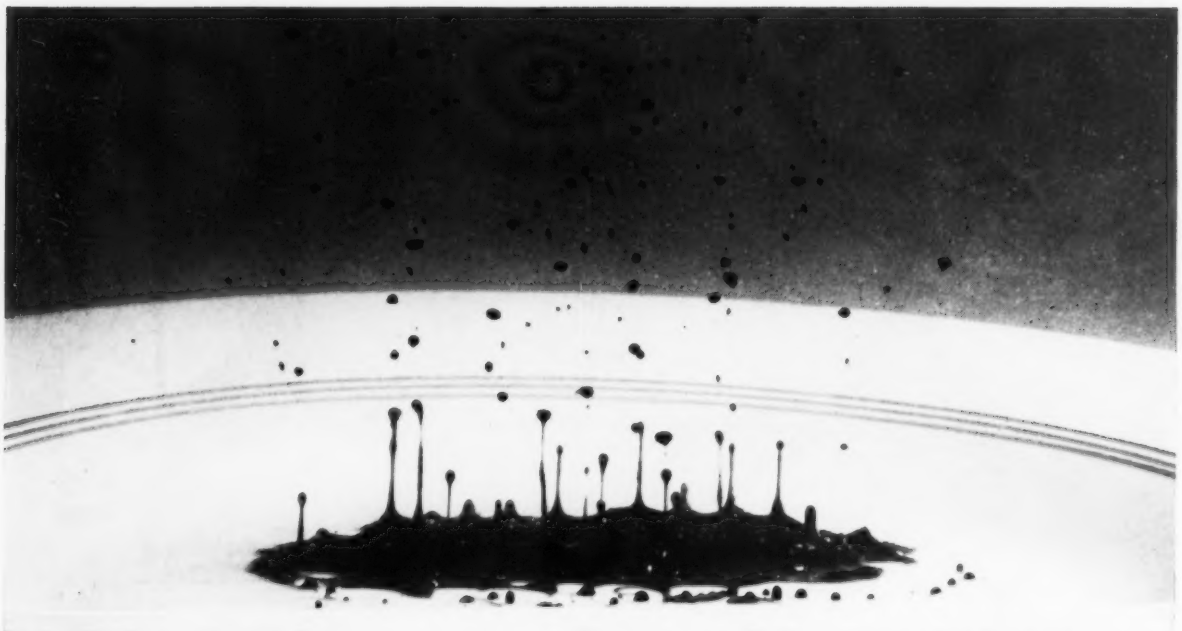
1270 AVENUE OF THE AMERICAS, NEW YORK 20, NEW YORK





Demonstrated here is the dramatic difference achieved in removal of a synthetic soil when a surface-active agent is used. Top photo shows the slow, sluggish lifting of soil produced by warm water alone. Photo below shows how the addition of Sulframin® alkyl aryl sulfonate reduces surface tension, speeds soil removal, disperses and emulsifies soil particles to prevent redeposition and improve cleaning efficiency.

Ultra has:
The products...The experience...The service to fill your surfactant needs

Your own experience tells you that selecting the right components for a good detergent or other surface-active product is no simple task. As many as eight or ten components may be required, depending on the task to be performed and the variety of desired sales appeals.

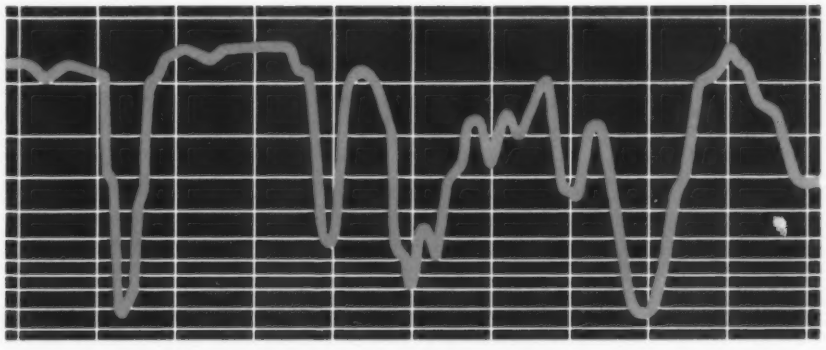
When it comes to formulation problems, Ultra can help you in more ways than one. Since Ultra manufactures one of the most complete lines of surfactants available from any one source, it can readily supply the components to meet your needs.

And with Ultra's unusually broad range of specialized alkyl aryl sulfonates, amine condensates, xylene and toluene sulfonates and other surfactants at your disposal, you'll have no trouble finding the sales-building combination of detergency, foaming power, viscosity, solubility and other properties you desire. Physical forms? Choose from powders, flakes, beads, gels and liquids.

As a start, send for our new master chart, "Ultra Surface Active Agents"—it's packed with useful information.

Ultra Chemical Works, Inc., Div. of Witco Chemical Co., Inc., Dept. U-420, 2 Wood Street, Paterson, N.J.
Plants in: Paterson, New Jersey, Chicago, Illinois, Hawthorne and Los Angeles, California.

The Molecule's Fingerprint



In human identification a fingerprint is regarded as an infallible characteristic of the individual. In chemical analysis a substance is characterized just as unmistakably by its spectrum. The use of spectroscopy as a modern means of quality control serves as a check on manufacturing and thus guarantees uniform quality. Spectroscopy has in addition become an indispensable tool in our physico-chemical research laboratories for both research and development.

We have published a booklet entitled "Absorption Spectroscopy", and shall be pleased to place it at the disposal of interested parties upon request.

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KING ROAD · TOTOWA · N. J.

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IT'S A SMALL WORLD

AND MARCHON SURFACTANTS PLAY A BIG PART IN IT

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SO_3 SULPHONATED DODECYL BENZENE
Now forms part of Marchon's range of dodecyl benzene sulphonates, and includes high purity sulphonic acids and their sodium salts with minimum inorganic content; especially suitable for liquid detergent formulations. Why not write for data, samples or advice?

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U.S. AGENTS: Aceto Chemical Co. Inc., 40-40 Lawrence Street, Flushing 54, New York. Telephone: INdependence 1-4100.
CANADIAN AGENTS: Tennant & Michaud Co. Ltd., Suite 905, 321 Bloor Street East, Toronto, and 4795 St. Catherine Street West, Westmount, Montreal 6.

AFTER CLOSING---

Outer Space Specialties CSMA Topic

CHEMICAL specialties for outer space will be among the topics slated for discussion at the 47th midyear meeting of the Chemical Specialties Manufacturers Assn. The meeting is being held at the Drake Hotel, Chicago, Monday through Wednesday, May 15-17. In addition to aero-space chemical specialties, the program calls for panel discussions on insecticidal aerosols, and new developments in floor finishes.

Hazardous substances labeling will be discussed both formally and informally, with one paper scheduled for presentation at the general session Wednesday morning, May 17. Should the long-expected regulations covering the new hazardous substances labeling law be issued prior to the meeting, it is likely they will come in for attention in a special session at the midyear meeting of CSMA.

A number of product surveys, in addition to that covering aerosols, will be released at the meeting, which gets under way formally on Tuesday morning, May 16. Sunday afternoon, May 14, and Monday, May 15 will be devoted to committee meetings. These will be followed on Monday evening, May 15, by a meeting of the Board of Governors of CSMA.

In addition to the selection of a nominating committee to choose a slate of officers and directors to be elected at the 48th annual meeting in New York, in December, division executive boards will be elected at the midyear meeting.

A symposium on "Preparing Automotive Specialties Products for the Consumer – Marketing Approach – Simoniz Company" will highlight the Tuesday morning, May 16, session of the Automotive Division. Participants in the symposium include Jack Tyson, director of advertising; Arthur Connolly, general sales manager; and Fred Stroud, merchandising manager, all of Simoniz Co., Chicago. A discussion of marketing audits and surveys will also be presented at this session by James Partner of Audits and Surveys, New York.

A joint meeting of the Detergents and Cleaning Compounds Division and the Automotive Division is scheduled for Tuesday afternoon, May 16. The subject of this joint session will be chemical specialties for aero-space. Speakers will include representatives of both divisions.

The Insecticide Division will meet jointly with the Aerosol Division on Tuesday morning, May 16, to discuss aerosol insecticides. Five papers are scheduled to be presented. Topics and speakers are: "Formulations Up to Date–Space Sprays," by John F. Odencal, Fairfield Chemicals Division, Food Machinery & Chemical Corp., New York; "Formulations Up to Date–Residual Sprays," by J. Everett Bussart, Velsicol Chemical Corp., Chicago; "House and Garden Aerosols," by E. F. Mace, S. C. Johnson & Son, Inc., Racine, Wis.; "Propellants Up to Date," by R. J. Peterson, Peterson Filling and Packaging Co., Danville, Ill.; and "New Mechanical Methods of Application," by A. H. Yeomans, U. S. Department of Agriculture, Beltsville, Md.

Four other speakers are scheduled to address the Insecticide Division session to be held Wednesday afternoon, May 17. Dr. H. L. Haller, Agricultural Research Service, U. S. Department of Agriculture, Washington, D. C., will speak on a subject yet to be announced. In addition, Andrew B. Meldrum, president of Meldrum and Fewsmith, Cleveland advertising agency, will discuss marketing, and M. P. Jones, Federal Extension Service, U. S. Department of Agriculture, Washington, D. C., will talk on the flannel board program on household insects. This program has been developed by the Insecticide Division Educational Committee. The fourth speaker will be Dr. George C. Decker, head of the Section on Economic Entomology, State Natural History Survey Division, Urbana, Ill. The subject of his address has not been announced as yet.

Highlighting the two sessions of the Waxes and Floor Finishes Division will be a panel discussion, entitled, "Floor Finishes–What's New?". The panel takes place Wednesday afternoon, May 17. Panelists and their subjects include: R. F. Wint, Hercules Powder Co., Wilmington, Del., "Lacquers"; J. M. Stanton, Cargill. Inc.,

Dr. Clifford Rassweiler

William Hazlett Upson

Minneapolis, "Oil Modified Urethanes", and Harry Howard, Shell Chemical Co., New York, "Epons".

The Tuesday afternoon, May 16, session of the Waxes and Floor Finishes Division will also feature a panel on "Waxed Floors Are Safe." Speaking on "The Technical Aspects of Alleged Negligence Arising from the Use of Floor Wax" will be Dr. J. V. Steinle of S. C. Johnson and Son, Inc., Racine, Wis. John D. Conner of Cummings, Sellers, Reeves and Conner, Washington, D. C., legal counsel for CSMA, will discuss "The Legal Aspects of Liability Arising from the Use of Floor Wax." A report on "Products and Raw Materials of the European Polish Industry" will be made at this session by Dr. Wolfgang Sapper, Farbwerke Hoechst, A. G., Augsburg, West Germany.

Tentatively slated to be presented at the general session on Wednesday morning, May 17, is a paper "Factors Relating to Ingestion Hazards," by E. A. Schweppe, product development department of Procter & Gamble Co., Cincinnati. In addition to the president's report, by Charles E. Beach of John C. Stalfort & Sons, Inc., Baltimore, reports of CSMA treasurer, Fred G. Lodes, Lodes Aerosol Consultants, New York, and CSMA secretary, A. A. Mulliken, will be presented. Larry LeSeuer, CBS news correspondent, is also expected to speak at this session.

Dr. Clifford Rassweiler, vice-president in charge of research and development for Johns Manville, New York, is scheduled to address the luncheon, Tuesday, May 16. The speaker at the Wednesday, May 17, luncheon will be William Hazlett Upson, author of the series of short stories dealing with the Earthworm Tractor Co., which have appeared over the years in the *Saturday Evening Post.*

In a departure from recent years, the Board of Governors of CSMA will meet on Monday evening, following divisional executive board and various committee meetings which get under way on Sunday afternoon, May 14, and run through Monday, May 15. This rescheduling of the first meeting of the board of governors is designed to avoid conflicts with other committee meetings and also to give committee chairmen time to prepare their reports for presentation at the board meeting on Monday evening and Wednesday morning.

The usual open-house parties in company suites will be held Tuesday evening, May 16, and the annual banquet and floor show are scheduled for Wednesday evening, May 17.

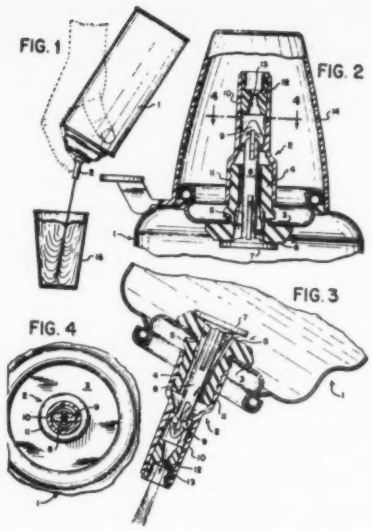
The second session of the Aerosol Division, to be held Wednesday afternoon, May 17, will feature four papers. R. M. Howe, Aluminium Laboratories, Ltd., and F. M. Languedoc, Connecticut Chemicals (Canada) Ltd., Toronto, will discuss "Compatibility, with Aluminum, of a Large Number of Chemicals Used in the Aerosol Industry." "Nitrous Oxide as Propellants for Non-Food Aerosols" will be reviewed by John S. Hinn and Robert C. Webster, Air Reduction Co., Madison, Wis. Daniel Geary of Union Carbide Chemicals Co., Tarrytown, N. Y., will discuss "Powder Aerosols." Dr. Frank A. Bower, Freon Products Division, E. I. du Pont de Nemours & Co., Wilmington, Del., will discuss "Stabilization of Alcohol Based Aerosols."

Also at the Aerosol Division meeting the 1960 Aerosol Product Survey results will be presented by E. E. Husted, Union Carbide Corp., New York.

—★—

Jet Pressure Dispenser

A novel aerosol package intended for jet dispensing of liquid concentrates has been developed, test marketed, and made available for licensing by Continental Enterprises, Inc., Jacksonville, Fla. Granted March 28, 1961, U. S. Patent No. 2,977,231 covers a "pressurized package for dispensing beverage concentrates into an aqueous liquid to produce a self-mixed beverage . . . " The unit features a jet valve engineered to



dispense a small high velocity stream, said to achieve immediate homogenization of the concentrate in milk or water and suspension without foaming or sedimentation.

Three milk fortifier flavorings — chocolate, strawberry, and cherry/vanilla—contained in Continental's "propel-pak" have been test marketed in Cleveland and Florida. They are said to have met with favorable response.

The chocolate flavored syrup is loaded with a mixture of nitrous oxide and carbon dioxide, comes in a 16 ounce can said to make four quarts (24 glasses) of chocolate flavored drinks without stirring. Contents are dispensed by pressing valve pointing downward into center of glass. "Do not press nozzle when can is upright, as pressure will be lost . . ." the label warns.

In addition to liquid food concentrates the package is expected to find use in the detergent, germicide and pharmaceutical fields. Main advantages claimed for the package are nonrefrigerated storage and shipment without loss of flavor or spoilage of food and beverage concentrates; instant reconstitution without stirring; and operation of the valve without blocking.

Continental Enterprises, based in Jacksonville, is headed by Arvin K. Rothschild. The patent

covering "propel-pak" was issued to Irving Fox, Jamaica, N. Y., and Sidney Palley, Brooklyn, N. Y., assignors of one-half to Fox-Wiprite Corp., Brooklyn, N. Y. Dr. John J. Sciarra, associate professor at St. John's University, Brooklyn, acted as consultant in the development of the package.

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CSMA Golf Tournament

Knollwood Country Club, Elmsford, N. Y., once again has been selected to be the site of the second eastern golf tournament sponsored by the Chemical Specialties Manufacturers Assn. Last year's first tourney sponsored by C.S.M.A. was held at Knollwood. The date of the 1961 outing is Tuesday, June 27. Cost of the outing will be $20, which covers greens' fees and dinner. Close to 50 prizes are being offered for both golfers and non-golfers. First foursome off the tee will receive special prizes, and there will be an "early birds" tournament, as well as awards for low gross and net scores, longest drives, nearest to the pin, and high gross. A second outing will be held in the Chicago area later in the summer.

Frederick G. Lodes of Lodes Aeorsol Consultants, Inc., New York, is chairman of the CSMA golf committee.

—★—

New Emery Bulletin

A new technical bulletin titled, "Empol 1018 Dimer Acid," was issued last month by Emery Industries, Inc., Cincinnati. Properties and specifications for this new, lighter colored commercial dimer acid are listed in the booklet. The acid, which has an 8 max. Gardner color, "good" color stability, and low monobasic acid content, is designed primarily for polymers and other uses demanding the lightest colored end products possible. Copies of technical bulletin No. 421 are available from the organic chemicals division of Emery, Carew Tower, Cincinnati 2, O. In Canada, write 639 Nelson St., London, Ont.

Intex Appoints Ravitz

Appointment of Herbert Ravitz as sales representative for the midwest was announced early

Herbert Ravitz

in April by Intex Chemical Corp., Lodi, N. J. Mr. Ravitz is handling the Intex line of quaternary ammonium compounds, alkanolamides, anionics, non-ionics and other surfactants, plus parabens (esters of parahydroxy benzoic acid), manufactured by Washine Chemical Corp., a sister company of Intex.

With Washine for three years prior to his new appointment, Mr. Ravitz earlier had been with the silicon division of Dow Chemical Co., Midland, Mich.

—★—

Food Aerosol Papers

Pressure packaged foods will be discussed at a special session during the annual meeting of the Institute of Food Technologists, to be held at the Hotel Statler, New York, May 7-11. The food aerosol session, for which John M. Jackson of American Can Co., Barrington, Ill., is chairman, will be held Tuesday afternoon, May 9, beginning at 2:20.

Speakers and their subjects include: Patricia A. Lychalk, Air Reduction Co., Madison, Wis., and Frank A. Bower, Freon Products Division, E. I. du Pont de Nemours & Co., Wilmington, Del., on "Food Aerosols with 'Freon C-318' and Nitrous Oxide"; P. W. Hardy, H. T. Hoffman, Jr., and E. Wheaton, American Can Co., New York, on "Aerosol Food Products in the FP Container"; J. J. Sciarra, St. John's University Brooklyn, consultant to Continental Enterprises, Jacksonville, Fla., "The Formulation of Self-Agitating Pressurized Food Products"; and W. Earl Graham, Clayton Corp., St. Louis, "Aerosol Valves for Pressurized Food."

A booth, provided by the Aerosol Division of the Chemical Specialties Manufacturers Association, will be among the exhibits at the meeting.

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Orbis Moves

Orbis Products Corp., formerly located at 5719 N. Central Ave., Chicago, has moved its offices to 5628 N. Elston Ave., Chicago 46, Ill., it was reported recently.

—★—

DuBois of Canada Expands

DuBois Chemicals of Canada, Ltd., a wholly-owned subsidiary of DuBois Chemicals, Inc., Cincinnati, recently announced plans for the immediate construction of a manufacturing plant in North York Township, Toronto.

The new facility will be equipped to manufacture the complete line of DuBois products and will also contain laboratory facilities for formulation control, research and service to customers. Included in the new plant will be a shipping area capable of the simultaneous handling of multiple car and truck loadings.

—★—

Calvert in GAF Sales Post

Larrie S. Calvert has been has been assigned the chemical sales territory in St. Louis and Kansas City, Mo., for Antara Chemicals, a division of General Aniline & Film Corp., New York. He succeeds J. A. Czerwinski, who has been assigned to a new territory on the west coast.

Mr. Calvert joined the company in 1959 as a trainee in the Chicago branch laboratory. In 1960 he was named manager, College Relations, with responsibility for coordinating the dyestuff and chemical division's college recruitment program.

C-P Unit Name Change

The name of the Consumer Products Division of Unexcelled Chemical Corp., Canaan, Conn., recently bought by Colgate-Palmolive Co., New York, for $3,000,000, has just been changed to Canaan Products, Inc.

The name Colgate-Palmolive will not appear on its new subsidiary's letter head, or other publicity materials, it was announced. Product names, such as "Wash N' Dri" pre-moistened disposable towels, will remain unchanged.

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Aerosol Products List

Aerosol fillers and suppliers are being asked to help bring up to date the list of available aerosol type products. The request, by the Aerosol Division of the Chemical Specialties Manufacturers Association, is an effort to bring up to date the current list of aerosol products, which is two years old. The list is expected to prove helpful to the Aerosol Marketing Development and Publicity Committee of the Aerosol Division of CSMA. Aerosol suppliers and fillers are also being asked to furnish, anonymously and on a voluntary basis, the brand names of any aerosol products they know of that have been introduced on the market in the past two years, and that are available nationally or on a regional basis.

—★—

Proposed Law Covers Soap

Soaps would cease to be exempt from the provisions of the Federal Food, Drug, and Cosmetic Act, the scope of which would be vastly extended, under a bill introduced into Congress by Mrs. Leonor Sullivan, Democratic Representative from Missouri. H.R. 1235, designated "Food, Drug, and Cosmetic Amendment of 1961," has been referred to the Committee on Interstate and Foreign Commerce.

To bring soap and soap products within the scope of the Federal Food, Drug, and Cosmetic Act, Section 201 (i) (2) of the Act would be "amended by changing the semicolon to a period and deleting the words 'except that such term shall not include soap'."

Among the proposed bill's stated purposes are " . . . to amend certain labeling provisions of the food, drug and cosmetic chapters; . . . require cosmetics to be shown safe before they are marketed commercially; clarify and strengthen existing inspection authority; make additional provisions of the Act applicable to carriers; provide for administrative subpeonas; . . . " The bill's provisions would, of course, apply only to articles in interstate commerce.

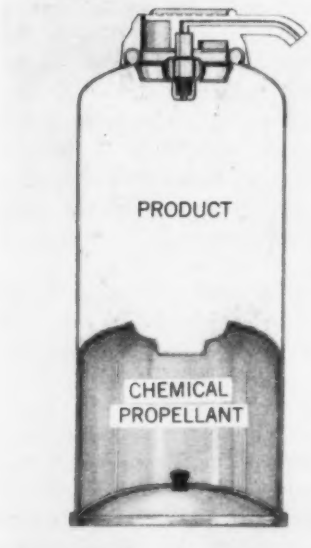
Pretesting of cosmetics prior to introduction into interstate commerce is the subject of an entire new section which would be appended at the end of chapter VI of the Act. All cosmetics except old established compositions would be subject to stringent testing programs and subsequent approval upon application to the Secretary of Health, Education, and Welfare. Labeling requirements resemble those of the Hazardous Substances Labeling Law.

Canco Piston Packing Aerosol Can Bows

AN aerosol package which eliminates all contact between propellant and concentrate has been launched recently by Bradley-Sun Division of American Can Co., Hillside, N. J.

The new package, designated "Mira-Flow," features a free moving polyethylene piston held in position by the sides of the extruded seamless aluminum can and the pressure of the propellant against the product. The piston serves as a barrier between the product and the propellant. The floating diaphragm or piston is shaped to fit around the valve and within the shoulders of the can. This engineering feature permits up to 99 per cent discharge of the product.

Cutaway view of "Mira-Flow" can.



Currently, the new container is being used for "Brylcreem," a viscous hair grooming agent by Beecham Products, Inc., Clifton, N. J. Fluid Chemical Co., Newark, N. J., loads "Brylcreem" on conventional equipment, the valve is crimped on and then the propellant is introduced through a plug in the bottom of the can. The propellant is nitrogen compressed to 90 psig. Gassing is accomplished by a special device developed by American Can Co.

Advantages claimed for the package by Bradley-Sun include smooth dispensing flow without frothing; efficiency unaffected by position in which container is held when dispensing; no accidental venting of propellant; and almost complete dispensing of product. Uses in food field, cosmetics, and pharmaceuticals are seen for the new aerosol container by C. L. Alexander, vice-president of American Can Co. and general manager of Bradley-Sun Division. The great majority of pressure packaged foods have been products where foaming is desired. The "Mira-Flow" container, he pointed out, will open the field to viscous foods which need to be dispensed smoothly and evenly.

The big difference is often made by the smallest difference. The big difference in sales, in customer loyalty, in consistent performance. Creating fragrance is a business of small differences. Two "lilacs" do not smell alike. Yet both are unmistakably "lilac". That immeasurable, indefinable difference is the difference between product success and product failure. That sales-compelling difference is the difference to which Felton devotes its career, a difference achieved through upwards of thirty-eight years of perfume oil experience. Send for the man from Felton. Let him help you give your product the little difference that makes all the difference in brand loyalty. Felton Chemical Company, Inc., 599 Johnson Avenue, Brooklyn 37, New York.

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Whatever shape or form detergents take...

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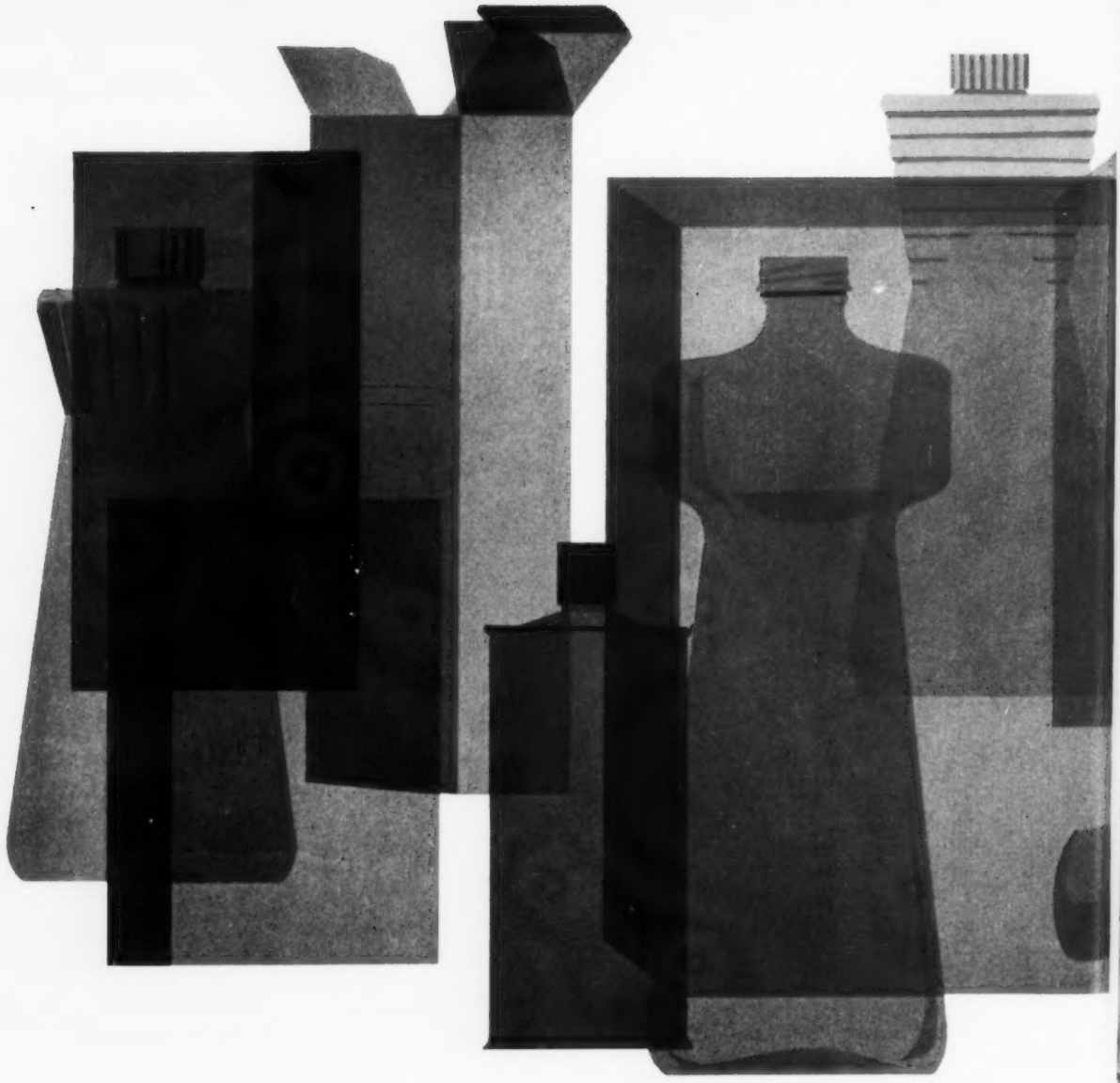
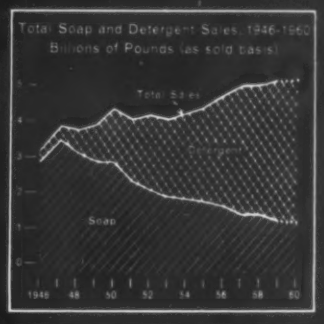
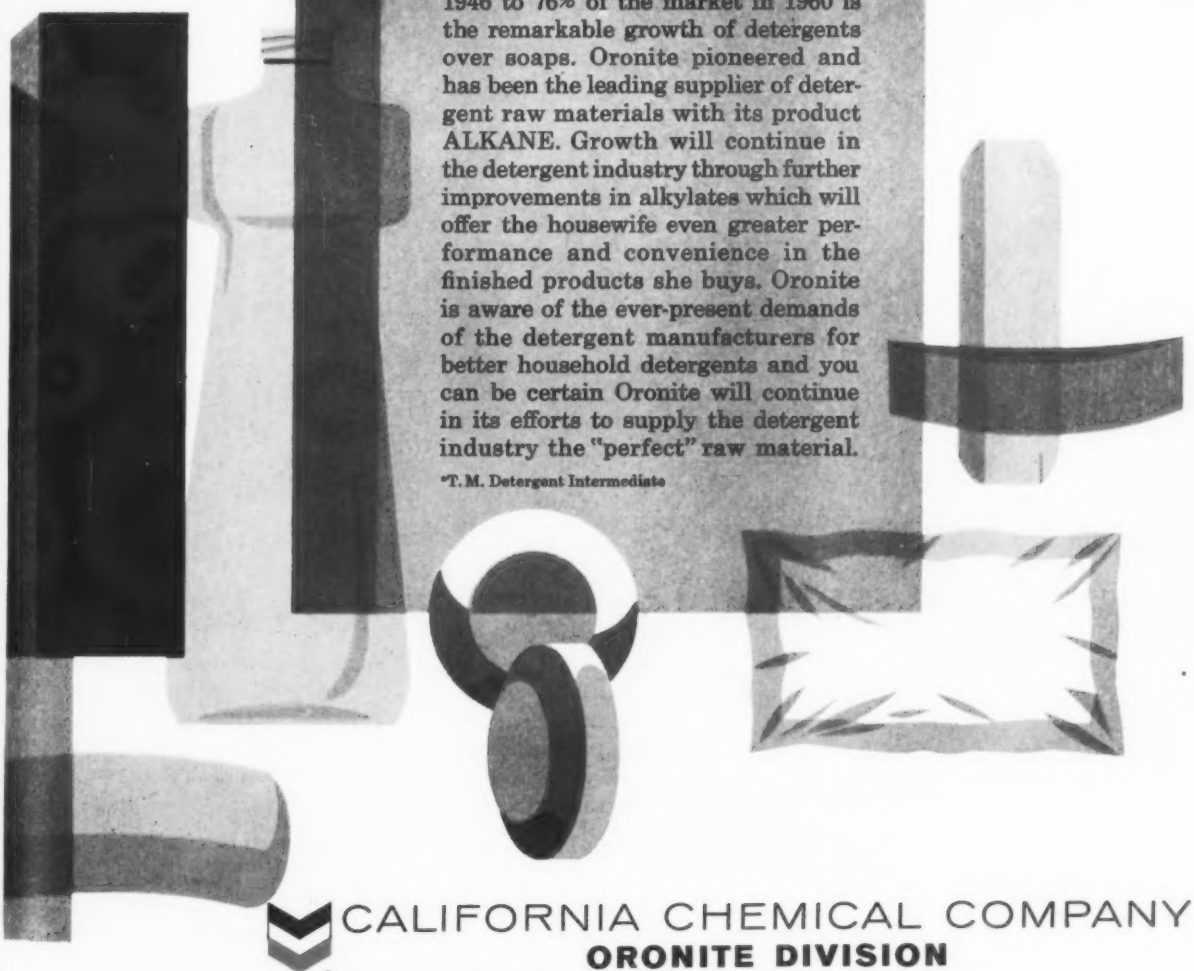


based detergents will continue to dominate the market



From almost insignificant sales in 1946 to 76% of the market in 1960 is the remarkable growth of detergents over soaps. Oronite pioneered and has been the leading supplier of detergent raw materials with its product ALKANE. Growth will continue in the detergent industry through further improvements in alkylates which will offer the housewife even greater performance and convenience in the finished products she buys. Oronite is aware of the ever-present demands of the detergent manufacturers for better household detergents and you can be certain Oronite will continue in its efforts to supply the detergent industry the "perfect" raw material.

*T. M. Detergent Intermediate



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COLOR SPECIFICATIONS	Maximum Color		Maximum Color Stability	
	Photo. Index	Lovibond 5¼" (Y/R)	Photo. Index	Lovibond 5¼" (Y/R)
Emersol 233 LL Oleic Acid	11/0.5	3/0.5	32/4.5	10/3
Emersol 221 Low Titer White Oleic Acid	15/0.5	5.0/0.5	51/10.5	20/7

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add specific new functional properties to lanolin's most active components

AMERCHOL Derivatives and lanolin do have a common denominator, but the similarity ends there. AMERCHOL Derivatives add special properties and specific functional effects to lanolin's most active components. These unusual materials provide the formulating chemist with valuable new tools for producing superior cosmetic and aerosol products.

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AMERCHOL L-101®—powerful *free-sterol* depressant of interfacial tension. Excellent auxiliary emulsifier. Adds gloss, soft textures, and superb emollience to formulations and imparts valuable moisturizing effects to the skin.

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VISCOLAN®—*dewaxed lanolin.* Supplies all the natural benefits of lanolin in intensified, convenient liquid form. Oil-soluble, low odor and color.

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CYQUEST* 40-D	Tetrasodium ethylenediamine tetraacetate dihydrate	Used in place of Cyquest 40 when a dry form is needed.
CYQUEST* ACID	Ethylenediamine tetraacetic acid	Used in place of Cyquest 40 when the sodium ions are undesirable.
CYQUEST* 30-HE	Trisodium N-hydroxyethyl-ethylenediaminetriacetate solution	For control of iron in the alkaline ranges from pH 6.5 to 9.5.
CYQUEST* DEG	Sodium dihydroxyethyl glycinate	For iron control in alkaline range from pH 9.5 to 12.5.

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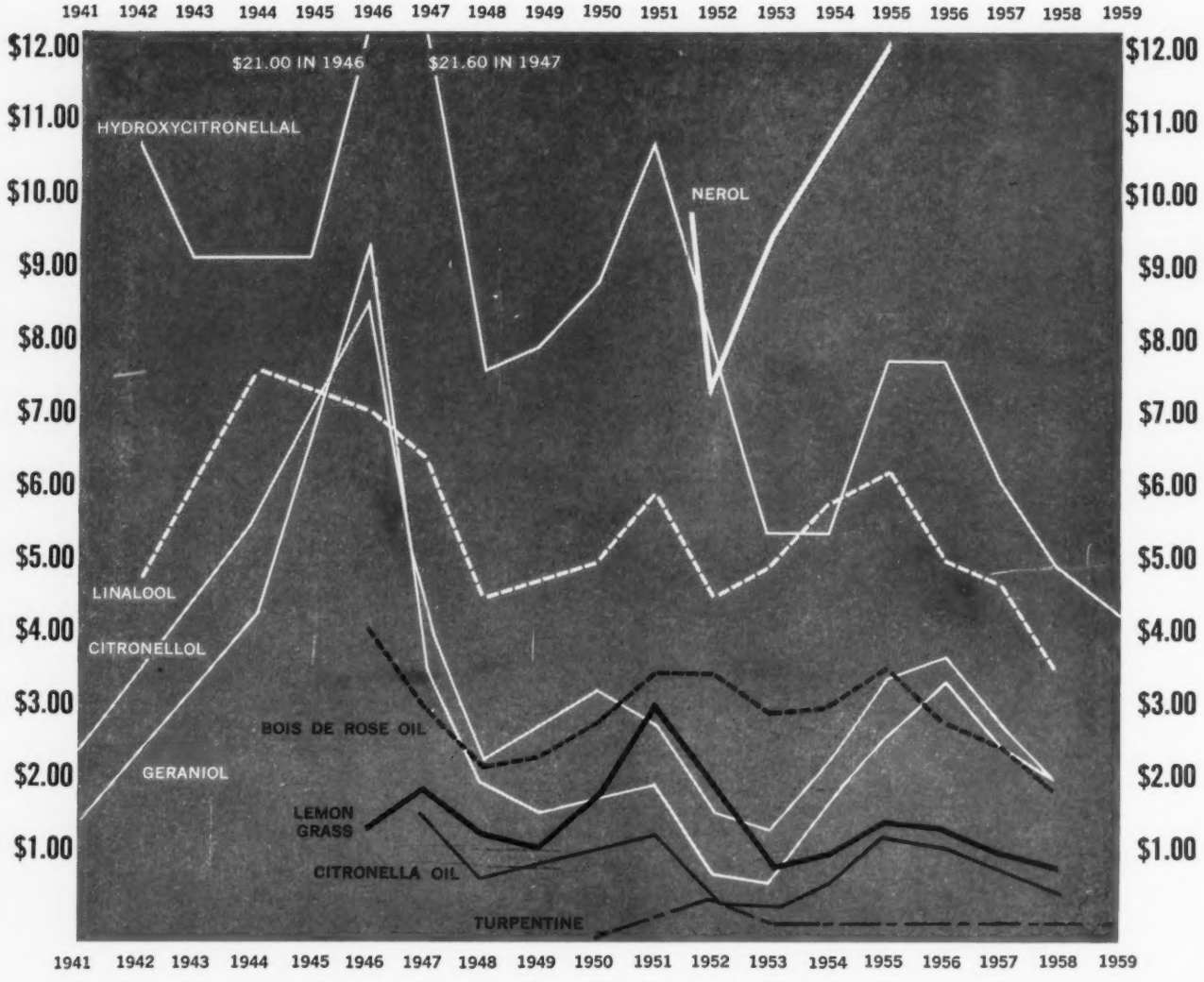

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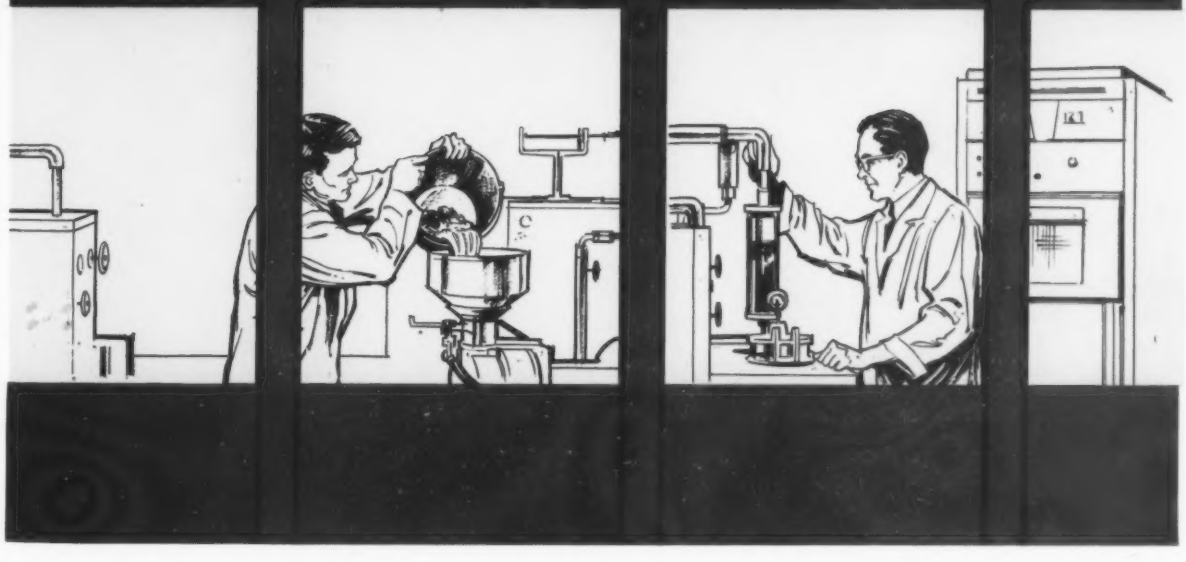

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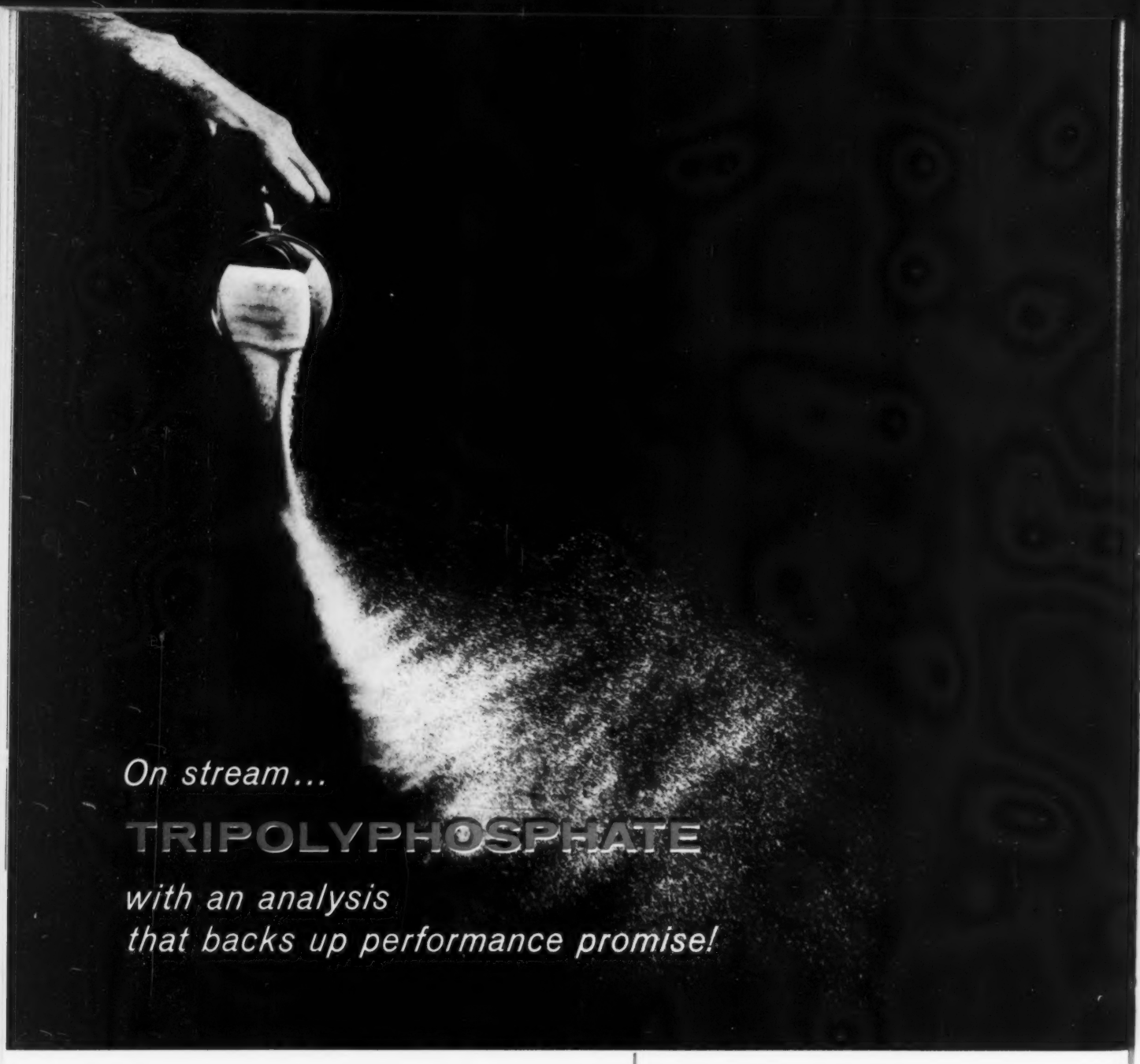

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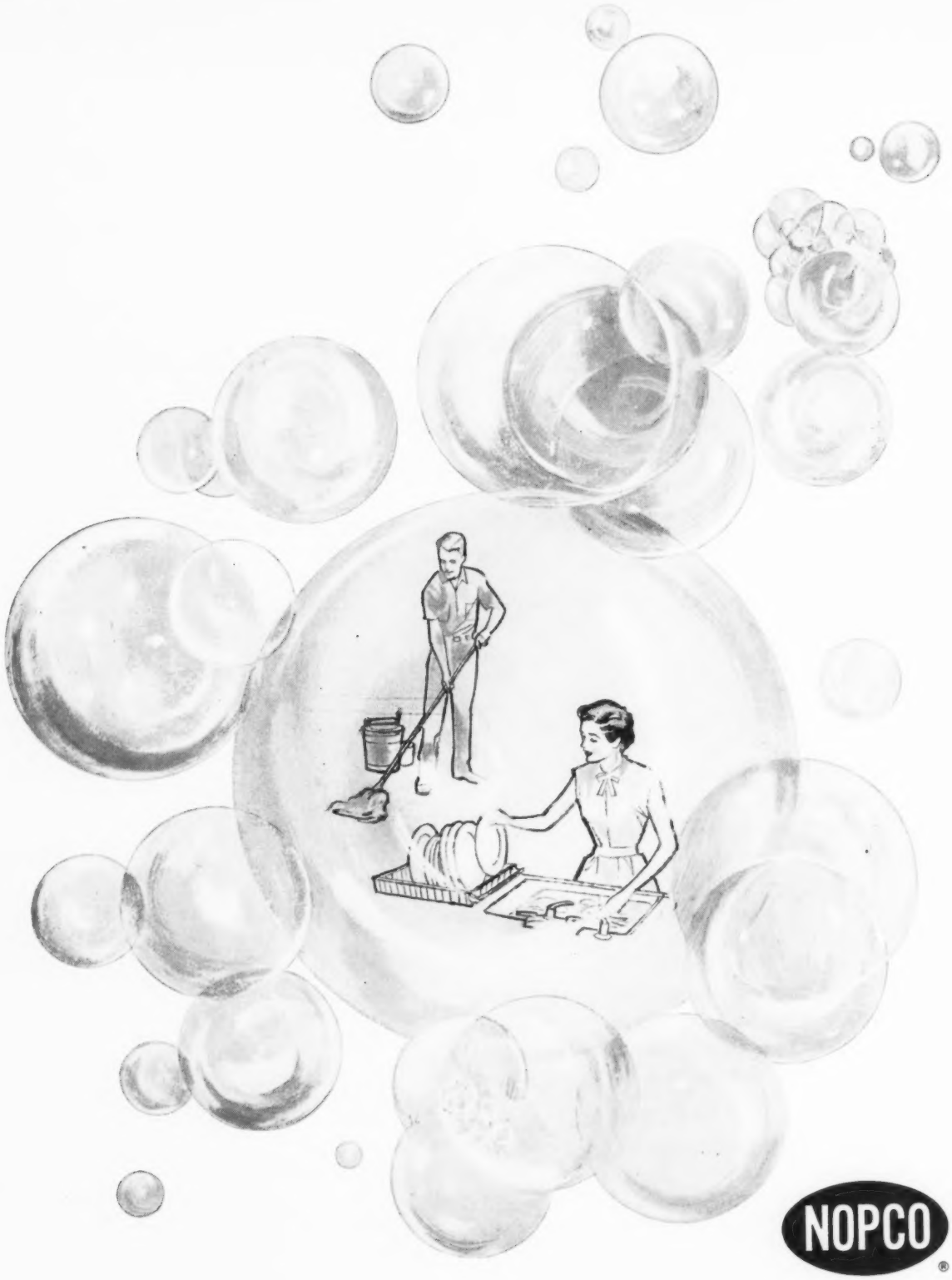
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☐ 7. **Systematic Analysis of Surface-Active Agents,** by Milton J. Rosen and Henry A. Goldsmith, Vol. 12. A series of monographs on analytical chemistry and its applications. (1960) 439 pages, 47 illustrations, 28 tables. **Price: $13.50.**

☐ 8. **Handbook of Cosmetic Materials,** by Greenberg-Lester. 467 pages. Covers the properties, uses and toxic and dermatological actions of over 1,000 materials selected in response to a questionnaire sent to cosmetic manufacturers. Includes a chapter on the skin by Howard W. Haggard, Director, Applied Physiology Laboratory, Yale University. **Price: $13.50.**

☐ 9. **Soap Manufacture,** by Davidson et al, in two volumes. Volume 1: 537 pages, 66 illus., 118 tables. Covers the history of the soap industry, theoretical principles of soap manufacture, raw materials of soap manufacture and the fatty raw materials. **Price: $13.50.** (Volume II in preparation)

☐ 10. **Cosmetics: Science and Technology,** edited by Edward Sagarin. 1453 pages, 138 illus., 107 tables. Covers origin, development of cosmetic science and discusses individual products such as hand creams, suntan preparations, skin lighteners, shaving soaps and creams, nail polishes and removers, deodorants, aerosol cosmetics and many other cosmetic and toiletry products. **Price: $27.50.**

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S A N D O Z

THINKS AHEAD WITH CHEMICALS

as the editor sees it...

REGULATIONS

Regulations governing the enforcement of the Federal Hazardous Substances Labeling Act are expected to be issued momentarily. In fact, they may be out by the time this issue is read. Interested parties, and no group is more interested than the chemical specialties industry, will have a chance to comment on the regulations before they take final form. Because of their importance to makers and marketers of chemical specialties, we urge a prompt and thorough reading of the regulations by members of this industry.

The Chemical Specialties Manufacturers Association will, as usual, keep its members informed and bulletin the regulations as soon as they are available. CSMA through its Precautionary Labeling Committee will probably act as a clearing house for its members and the chemical specialties industry as a whole in discussing the regulations and preparing a statement on them.

Judging by questions directed to us following the signing of the law, there are many specialties makers who have not bothered to find out what it is all about. To understand the regulations, it is essential to know the law. Because the regulations will have a vital effect on the specialties business, manufacturers can do no less than take the time and trouble to prepare intelligent comments.

* * * * *

DEPRESSION-PROOF

Are industrial chemical specialties "depression-proof"? They are in the opinion of at least one expert in this field with whom we discussed the matter recently. The cost of modern industrial plants and public buildings is so great that their correct maintenance is a must. This applies whether the building is in full operation or only partially used.

For those specialties makers whose sales are mainly in the industrial field this opinion makes good sense. It is a point that sellers of industrial chemical specialties should drive home forcibly to their customers. In fact, it may be the answer to lagging sales in times such as we have been experiencing in the past six months or so.

Good maintenance is no longer luxury—if it ever was. Simple arithmetic will easily make this clear. It is up to the salesman on the firing line to convince the doubters among building maintenance men.

* * * * *

WHITEWASH

For close to 10 years the Department of Justice has conducted a harassing legal action against the Soap Association and three of its member companies. Although the actions were separate, they were part and parcel of the same anti-trust charges the government attempted to pin on the soap industry. In the first instance the Justice Department failed to obtain a criminal indictment by a Federal Grand Jury. Early last month the "trust-busters" of the Department of Justice threw in the sponge in the civil suit, which started way back in December, 1952.

Of course, the soap industry and its trade association were given a clean bill of health, and the Department of Justice gave itself a whitewash of unprecedented proportions. The defendants also received a stiff bill for legal fees, to say nothing of the time consumed in the preparation of a defense. The taxpayer, whether he knows it or not, was also an interested party, and picked up the check for the cost of the government's part in this legal fiasco.

How Uncle Sam's agents could have been inveigled into this action is something that will continue to puzzle us for many years. Why were legal proceedings instituted against an industry as viciously competitive as the soap and detergent business? To those even most casually

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acquainted with the marketing of soaps and detergents the struggle for markets is well-known. This has been pointed out by us time and time again. And, yet, the government, no matter what the cost, was persuaded to pursue a course that was bound to end as it did.

Now that the legal fight is over, the three soap company defendants will continue, probably more vigorously than ever, the everlasting fight to beat the brains out of each other.

* * * * *

DEVELOPMENTS

The development of a new type aerosol container that can handle viscous products, including foods, and the imminent clearance of a fluorinated hydrocarbon type propellant for food products has given the aerosol field a real shot in the arm.

The recently announced aerosol container that completely separates the propellant from the product has already found commercial application for a hair care product. Its major application is expected to be in pressure packaged foods.

Clearance is expected this month by the Food and Drug Administration of a proprietary fluorinated hydrocarbon propellant that overcomes some of the shortcomings of other types of propellants currently used. This development is believed to be of major significance in expanding sales of a pressure packaged product that heretofore has not lived up to expectations.

Individually, either of these advances could be regarded as of prime importance. Coming within a short time of each other they show real promise of a considerable broadening of the whole spectrum of pressure packaging.

* * * * *

WHY CHANGE

How often must a label or package be changed to keep it contemporary? "A package should not be changed just for the sake of change alone. Ideally, a radical alteration in size, shape or label format should be made only when the company has a new product 'plus' to talk about—and deliver." This sensible answer to an oft asked question is offered by A. E. Budner, who heads the household products department of S. C. Johnson & Son, Inc., Racine, Wis. His opinion was quoted in the 75th anniversary issue of Johnson's house magazine.

To all of which, we say amen. In the field of chemical specialties, where frequent package changes are commonplace, more often than not this advice has been observed in the breach. Package and/or label changes generally are costly, and if they do not boost product sales they are a complete waste of time and money.

Mr. Budner admits that labels and packages should be reviewed regularly. He points out, however, that a really "great" label or container can be effective for years.

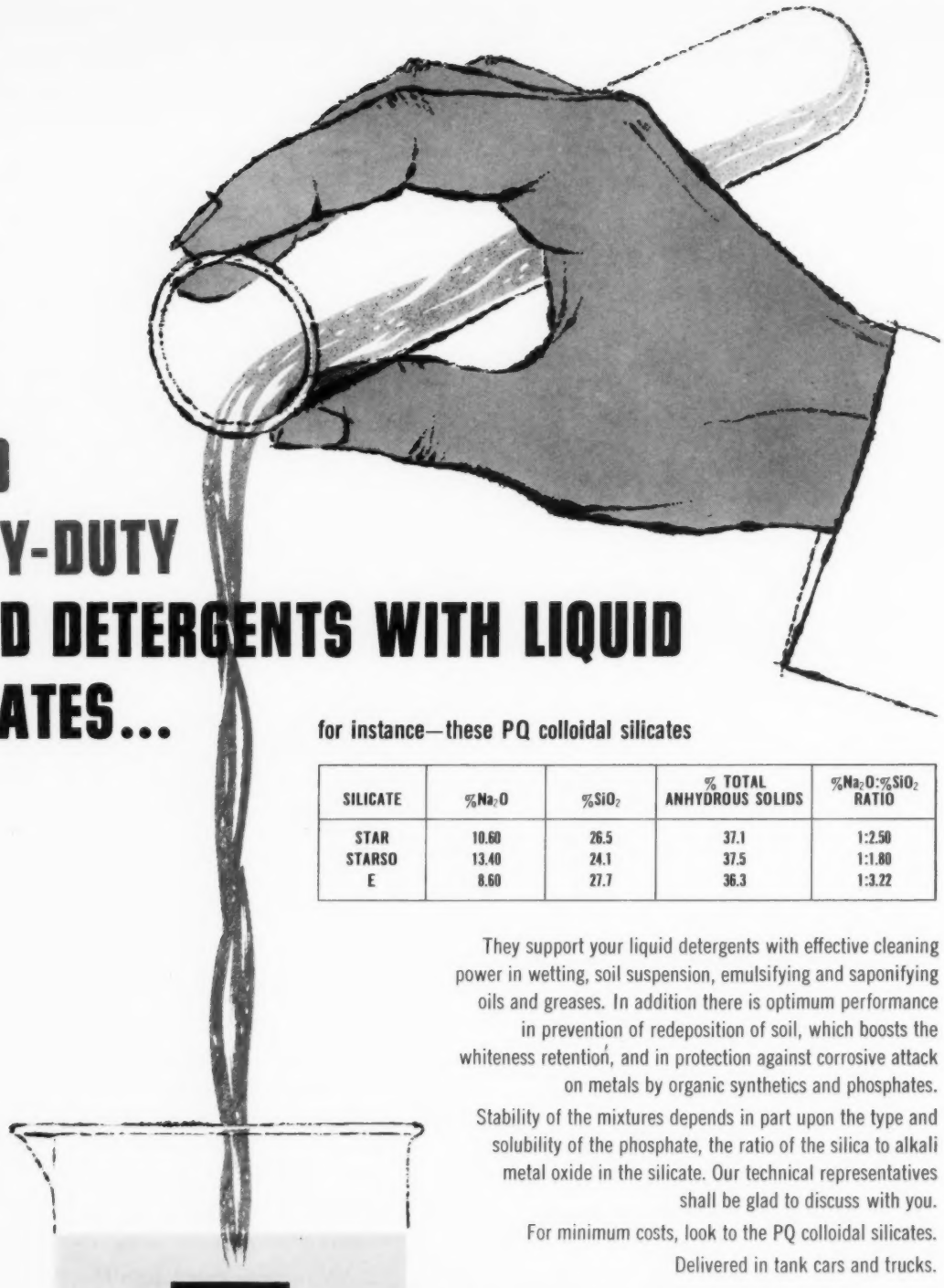
To a considerable extent the growth of the self-service supermarket as an outlet for sales of chemical specialties of all types has spurred changes in packages and labels. Not to be lost sight of, however, is the product itself. Its performance, in the final analysis, usually determines whether or not it will be a success. Let's never forget this fact in our preoccupation with new and ingenious forms of packaging.

* * * * *

SILLY

The exemption of soap from provisions of the Federal Food, Drug, and Cosmetic Act would be removed if a bill introduced in Congress earlier this year were to pass. The wide-ranging bill, introduced by a woman member of the House from Missouri, would amend the Food, Drug, and Cosmetic Act, and call for all sorts of new regulations on drugs. In addition, the bill requires cosmetics to be shown as "safe" before they are marketed commercially.

Apart from regulating the drug and cosmetic industry to extinction, the lifting of the exemption soap has enjoyed these many years strikes us as silly. For three thousand years or thereabouts soap, when used as intended, has amassed a record of safety second to no product. To question the safety of such a widely used product at this stage in its development seems more like the venting of spleen than sound legislation.



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as the reader sees it...

Pentrone Whereabouts

Editor:

We are regular subscribers to *Soap and Chemical Specialties*, and find a great interest in your articles which give us a good indication of detergent trends in the United States. We find particular interest in your classified list of surfactants which has been of considerable value to us in the past.

We are, however, confronted with a problem which you could probably help us to solve. We are interested in an American company called Pentrone Limited, who are specialists in detergents for the shipping industry. We find ourselves unable to discover the whereabouts of this company, and as we are interested in one of their products, "Navee 42", we hope you can give us some information on this company in order that we may obtain a small sample of this product.

We feel sure that a magazine like *Soap and Chemical Specialties* with its large, world-wide circulation will be able to assist us in this matter.

D. Parry, technical manager,
Reddish Chemical Co., Ltd.,
Cheadle Hulme,
Cheadle,
Cheshire,
England

We believe the company referred to by Mr. Parry is Penetone Corp., 74 Hudson Ave., Tenafly, N. J. Ed.

★

Insect Wall Chart Offered

Velsicol Chemical Corp., Chicago, producer of chlordane insecticide, is offering lawn and garden products dealers a sales aid in the form of a three color insect guide illustrating and describing more than 100 insects. The wall chart is 42 inches square, shows insects and the damage each causes. Insects are listed under categories, such as: lawns and patios, household, fruit trees, etc.

Methods of application are shown at the bottom of the chart. Indoor usage includes aerosols, sprays, dusts, and oil solutions. Outdoor forms of application cover sprays, dust, granules and insecticide-fertilizer mixtures.

★

Breck Advertising Cited

Advertising created by and for John H. Breck, Inc., Springfield, Mass., during 1960, received six different awards in the recent 9th Annual Merit Award Contest held by the Springfield Advertising Club.

Among the awards earned by the firm was its entry in the category of magazine advertising, which consisted of full-color, full-page advertisements on the three "Breck" shampoos. Other categories in which the company had winning entries are: national television advertising, one minute black and white TV commercial on "Breck Hair Set Mist;" point of purchase, window display on "Breck Banish Dandruff Treatment Shampoo;" transportation display, car card on three "Breck" shampoos; overall advertising campaign, Breck-R.C.A. Victor premium record offer; and national newspaper advertising, "Glimmer" test market campaign.

A total of 182 entries were submitted for the contest which was open to all advertisers in western Massachusetts.

★

Elm Disease Spray

A new liquid homogenized mist spray claimed to control Dutch elm disease has just been introduced by Chemical Insecticide Corp., 30 Whitman Avenue, Metuchen, N. J. "Mist Blo 26C-OF" contains DDT for control of the scolytus bark beetle, carrier of the disease, and other chewing insects. Also formulated into the product are an aphicide (rotenone), a miticide ("Chemite"), a fungicide, plus a concentrated foliar plant food.

Good residual control, low phytotoxicity and no flash point are among the advantages claimed for the product which is said to contain a minimum of solvent. "Mist Blo 26C-OF is a one shot treatment.

Walter Ellis (second from right), chairman of the 9th Annual Merit Awards Contest conducted by the Advertising Club of Springfield, Mass., presents a certificate to John P. Hughes, advertising manager for John H. Breck, Inc., representing one of the firm's winning entries. Others in the photo are Margart A. Cullen, account executive for Charles Sheldon, Inc., advertising agency, and Douglas M. Shaylor, advertising department supervisor for John H. Breck, Inc.

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Kyro EO. KYRO EO. A neutral nonionic synthetic detergent of the 100% alkylphenol ethylene oxide condensate type. A clear light-colored liquid with a clean, pleasant odor. Its superior detergent, wetting and emulsifying properties offer excellent performance in liquid detergents, sanitizer-detergents, self-emulsifying solvents, laundry detergents, glass, textile, and dairy cleaners, insecticides, and bottle washing compounds.
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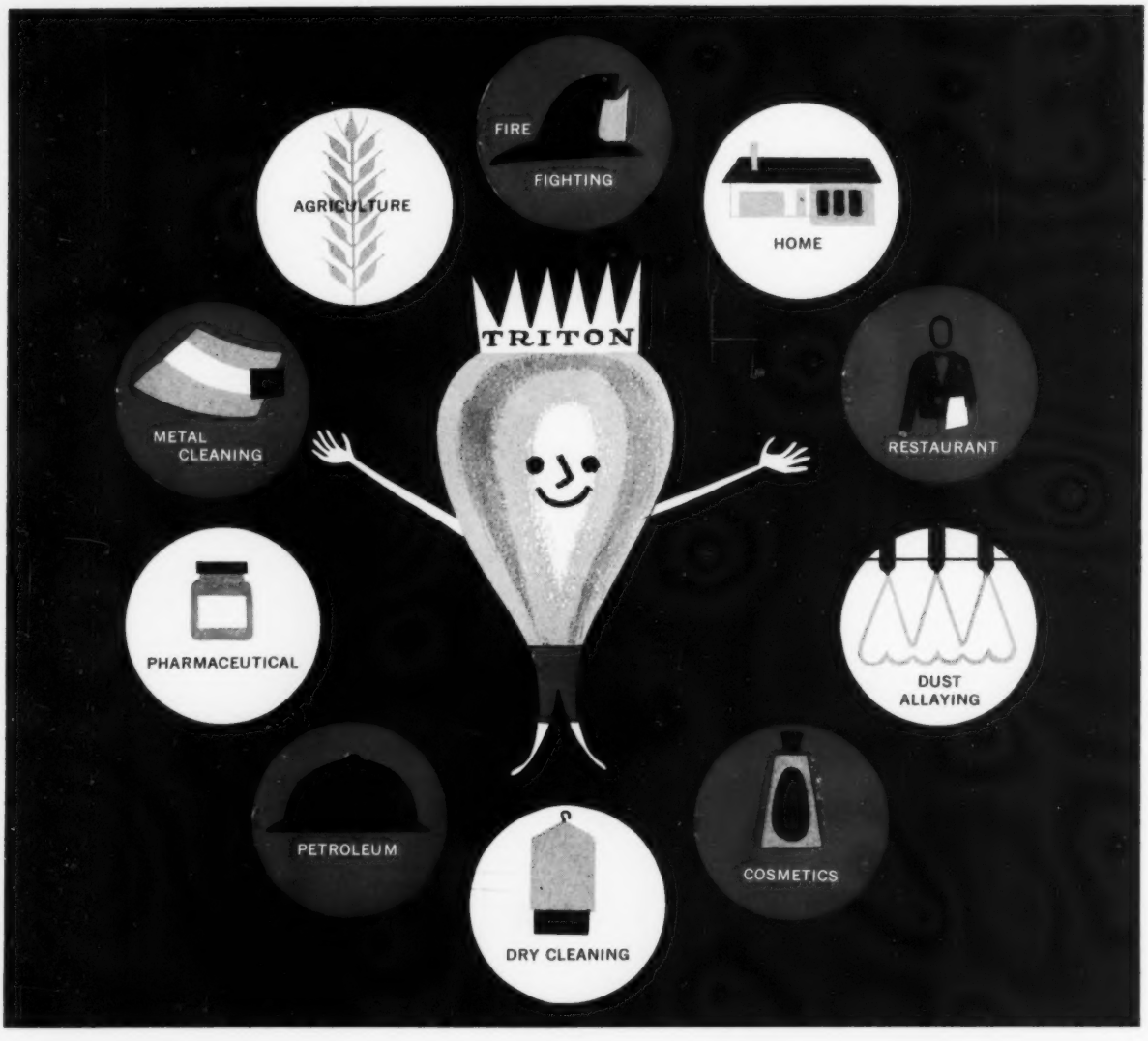

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Dishwashing Detergents Evaluation

Filming and water spotting of glassware in home dishwashers can be traced to detergent, dishwasher and water characteristics by new method employing new photometric apparatus

By A. L. Kimmel and H. M. Gadberry*, and D. O. Darby

Midwest Research Institute
Kansas City, Mo.

Economics Laboratory, Inc.,
St. Paul, Minn.

WATER spotting or filming of glassware remains one of the major concerns to those interested in home mechanical dishwashing.

To avoid confusion of terms the development of spots or overall film on glass and silverware in dishwashing should be distinguished from food soil redeposition. The mechanism of water spotting is quite different from soil redeposition on clean fabric in laundering. Therefore, in dishwashing the term redeposition is reserved for, say, the transfer of a corn flake from a cereal bowl in the lower rack to a coffee cup in the upper rack.

The causes of water solids deposition are not yet fully understood. Certainly the amount and kind of solids present in the final rinse water are important factors in determining the nature and extent of spotting and filming. But other factors are equally important. The food soils initially present, the detergent used, the nature of the surface on which deposition takes place, the pattern of water action within the machine, and other factors not-so-well defined all influence water spotting.

Radioisotope tracer studies have shown that the final spot or film deposit contains material derived from three sources: fat and protein soils, detergent builders, and water hardness. (1) All three constituents are believed necessary for the build-up of typical water spotting on clean glass.

Glassware spotting is truly a complex problem; one which deserves more scientific attention than it has received and more precise methods for its investigation. This paper describes an instrumental method for measuring the deposition of water spots and film in studies of mechanical dishwashing.

Historical Background

Precipitation or deposition of suspended material on otherwise clean tableware has been a problem in mechanical dishwashing since the first machines were developed. But water spotting received serious attention only after improvements in machine design and detergent development made possible an almost complete removal of food soil. Spotless glassware has now become a major criterion of dishwasher performance.

Evaluation of water spotting has almost always been based on visual examination. It is true that Wilson and Mendenhall (2) employed a transmittance photometer to measure filming of glassware during the washing cycle. However, the filming which they measured was largely due to precipitation of calcium orthophosphate, silicate and carbonate, a failing of early-day detergent compositions rarely encountered with today's well-formulated products.

G. H. Wotring of General Electric Co. is generally credited with pointing out the effectiveness of hypochlorite bleach in removing and preventing water spotting. (3) In the home dishwashing field, Calgon, Inc., first popularized the use of chlorinated trisodium phosphate to reduce spotting. Later a wide variety of chlorine-releasing compounds found favor as agents to mitigate water spotting. These additives, together with better surface active agents, have improved cleaning and reduced water solids deposition to the point where visual observation of spots now often requires favorable lighting, and precise estimation of the degree of spotting is extremely difficult.

Measurement of water spots by light transmission methods is impossible. Plate glass spotted to an unacceptable degree shows less than one half per cent reduction in optical transmission.

The Chemical Specialties Manufacturers Association (CSMA) standard test method for evaluating the water spotting of glass tumblers (4) has been widely adopted since 1957. This test does much to standardize the washing procedure so that better repeat-

*Paper presented at annual meeting of ASTM Committee D-12 on Soaps and Other Detergents, New York, March 6.

Figure 1. Tumbler evaluation light box

ability is attained. Evaluation by spot counting or visual comparison, however, is still subjective and this human element makes precise checks between two operators or between different laboratories difficult.

Many investigators have attempted to improve the evaluation of tumblers by employing special light boxes or by preparing graduated comparison standards. The viewing box and standard spotted tumblers used at Midwest Research are shown in Fig. 1. Each test tumbler can be matched against the standards and assigned a corresponding numerical score.

The principle of the light scattering photometer was first suggested by the effectiveness of viewing these edge lighted tumblers against a dark background. In an unpublished report (5) A. K. Pryor had previously described the preliminary development of a photometer based upon this principle which used a photomultiplier as the detector.

The instrument described here was developed to provide rapid and precise measurement of deposits formed on glassware in dishwashing. It has proven a versatile tool, and it has greatly reduced the number of tests required to obtain significant results.

Development of Apparatus

Early in the development of the photometer, preliminary studies were made to determine the best optical and electronic principles for use in the final instrument.

A spot counting type of instrument at first seemed most desirable because many previous evaluation methods were based upon the counting of spots. An optical scanning device which counted pulses of light scattered by the deposit gave promising results. However, because of the number of unfamiliar parameters associated with the collection and especially the interpretation of pulse height distribution data, it became apparent that the development of a badly needed instrument would be delayed for several months. We believe that the scanning principle should be explored further for reasons that appear later in the discussion.

The photometer which was finally developed, instead of scanning, views the entire specimen and provides an integrated value for the scattered light.

The optical stage shown in Fig. 2 was used to determine the proper relationship between angle of illumination and viewing. True edge lighting of the glass was found to be undesirable, because pits and scratches in the glass were greatly magnified while relatively little light was scattered off the deposits on the surface. Illumination of the test specimens by grazing light was found to be best. The angle of viewing was less critical than expected; a broad peak of response extends from about 45° to 135° relative to the incident light beam. Because the size of particles in both the film and spot deposits is large compared to the wavelength of visible light, Rayleigh scattering does not apply in this case. Therefore, the wavelength of light used is not critical.

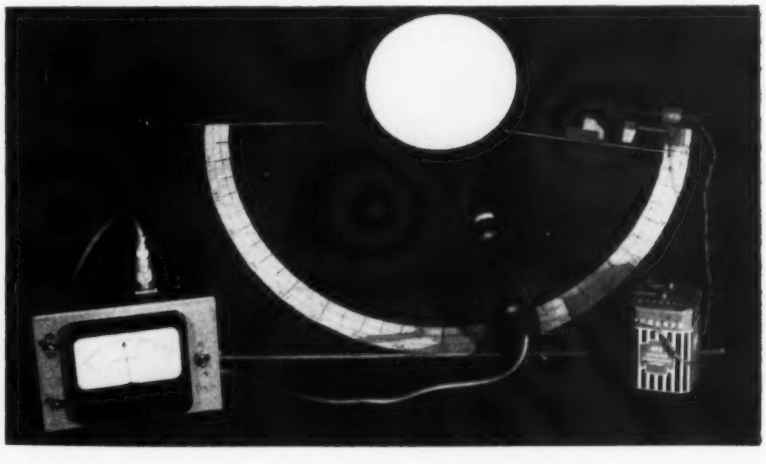
A variety of photosensing elements was tried. Like previous investigators we discovered that photomultipliers possessed more sensitivity than was required, but suffered from instability and fatigue. Lead sulfide photoconductive cells and photovoltaic "solar cells" were rugged and stable, but did not quite have the sensitivity needed. An old, reliable type of gas phototube, the 1P40, was eventually selected for the detector units.

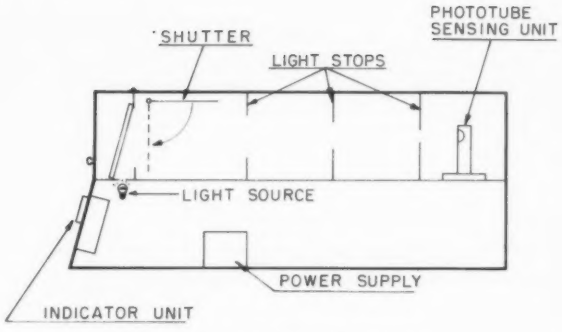
The optical and mechanical design features of the photometer are shown in Fig. 3. The essential components include:

A. Light source (bank of 10, clear 15 watt lamps, Type GE-7) in reflector trough.

B. Specimen and comparison standard glass plates, inclined at 10° to the

Figure 2. Optical stage used to test photometer principles





SIMPLIFIED DIAGRAM OF PHOTOMETER

Figure 3.

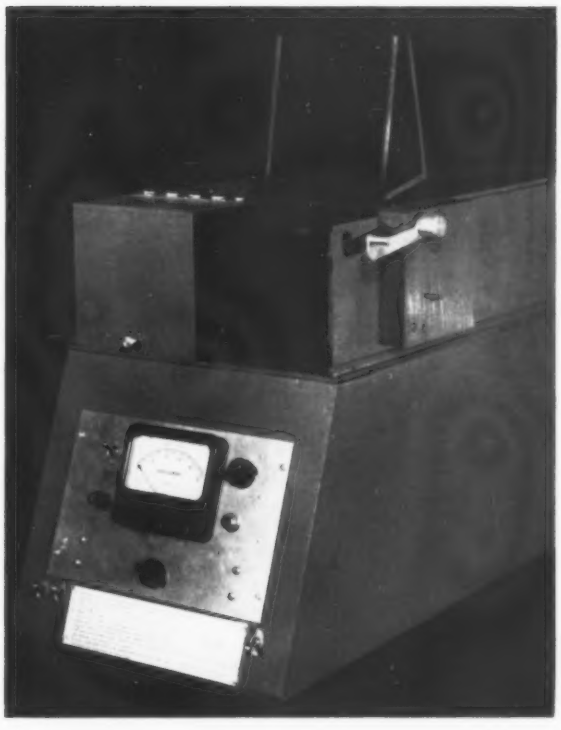


Figure 4. Completed photometer ready for use.

light beam passing through a collimating slit.

C. Lightproof lid.

D. Shutter to minimize photocell fatigue. A microswitch coupled to this shutter turns on the lampbank when the shutter is fully open. Thus, no light strikes the phototube except during an actual reading.

E. Light trap baffles to eliminate spurious reflections within the instrument.

F. Matched 1P40 phototubes.

G. Amplifier and bridge circuit with power supply.

H. Control panel with meter (O-50 microammeter).

The completed instrument ready for use is shown in Fig. 4. A double beam comparison optical system was employed to obtain maximum sensitivity and to avoid serious instability due to aging of the light source or gradual drift of the circuitry. Thus, the test specimen is automatically compared during each reading against a clean reference standard. The test specimens used are 5½ inch squares of silvering quality polished plate glass. A total area of 25 square inches is viewed by the photometer.

The measuring circuit of the instrument schematically shown in Fig. 5 uses a conventional DC vacuum tube voltmeter type amplifier. The detecting photocell is connected to the grid of one tube and the reference photocell to the grid of the other. The microammeter is located in the plate circuit of the tubes thus providing amplification not obtainable with a cathode follower. This double bridge circuit is balanced before each set of measurements by the use of two reference standard clean glass plates. A 10 turn Helipot eliminates the need for a fine balance adjustment even on the most sensitive range. Power for the instrument is obtained from a gas tube regulated power supply.

Control of Variables

The value of results obtained with this photometer can be greatly enhanced if several factors in the washing procedure are carefully controlled.

The first such factor is *placement of test specimens.* A sufficient number of test plates should be distributed throughout the rack which normally holds water tumblers to represent accurately the average spotting level of the machine being used. Water droplet velocity and distribution varies with location throughout most mechanical dishwashers. This variation results in quite significant differences in deposition measured at various locations. The pattern of "active" and "dead" spots should first be determined for the particular machine and dishware load being studied. Then a few test specimens can be used to represent the average results. We employ six test plates; one at the position giving least deposition, one at the place showing most spotting and four located in average areas. Fig. 6 shows the location of test specimens for one particular machine. The average deposition value for each location is noted.

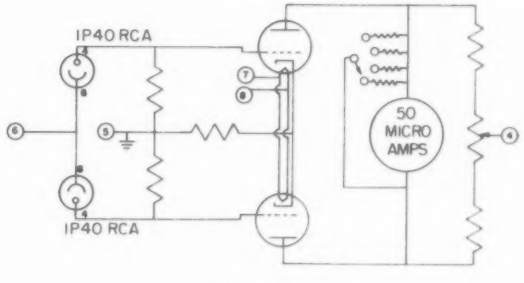
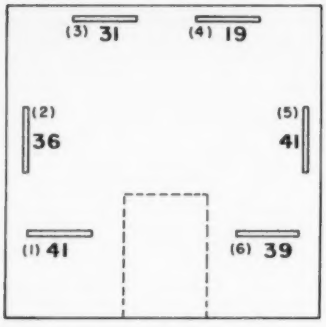


Figure 5.

SCHEMATIC OF CIRCUIT



VARIATION OF SPOTTING WITH LOCATION OF SPECIMENS

Figure 6

PLATE NO	PHOTOMETER READINGS OF PLATES						CORRECTED DEPOSITION VALUE
	BEFORE WASHING (CLEAN)			AFTER WASHING			
	FRONT	BACK	TOTAL	FRONT	BACK	TOTAL	
1	+3	+5	+8	21	28	49	41
2	−2	−4	−6	17	13	30	36
3	0	0	0	15	16	31	31
4	0	+3	+3	12	10	22	19
5	−6	+2	−4	18	19	37	41
6	0	0	0	20	19	39	39

DEPOSITION AFTER WASHING (F+B)−CLEAN PLATE READING 207 TOTAL
(F+B) = CORRECTED DEPOSITION VALUE (21 +28)−(3+5)=**41**

AVE. DEPOSITION= $\frac{\text{TOTAL CORRECTED DEPOSITION VALUE}}{6} = \frac{207}{6} = \mathbf{34.5}$

TYPICAL DEPOSITION MEASUREMENTS AND SAMPLE CALCULATIONS

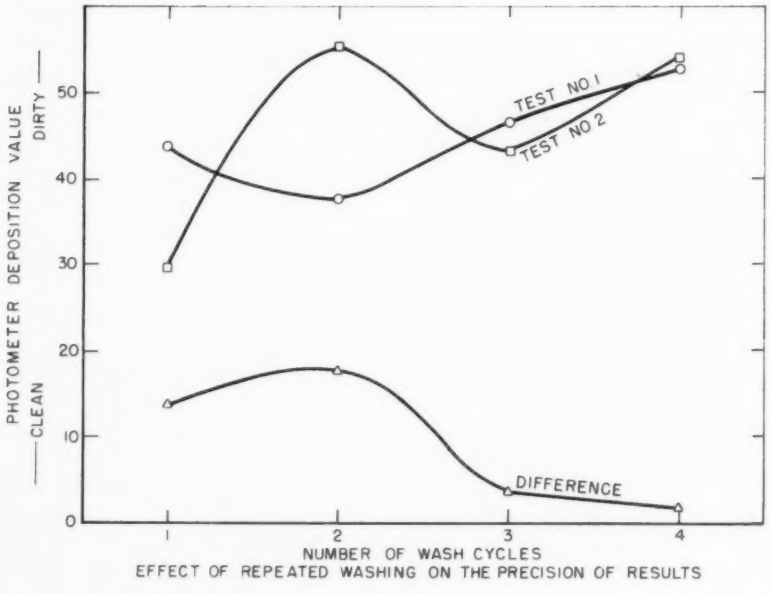
Figure 8

This degree of variability (frequently amounting to ±50 per cent of the average) is typical of a number of machines.

Next, *repeated washes are needed* to allow consistent evaluation. Water solids deposition is believed to be a cumulative process. Deposition on carefully hand-cleaned plates during the first machine wash is erratic and unpredictable. With succeeding washes, spots remain and the deposit grows heavier. After several cycles the agreement between replicate runs becomes better. Typical results appear in Fig. 7. We have performed a large number of such determinations, and the values obtained after four successive machine washing cycles are the most consistent. Increasing the number of washing cycles does not improve reliability although the quantity of deposit gradually increases.

Finally, *soil load and placement* are important. In the CSMA water spotting test a 40-gram cake or patty of soil is introduced onto the floor of the machine. Because some types of dishwashers do not break up the patty, we prefer to smear the soil onto several salad plates in the lower rack, a condition which also more nearly simulates food soil in a home dish load. The CSMA level of 40 grams of soil was adopted for all tests, but the amount of soil is not critical. Between 15 and 60 grams soil load, water spotting is almost unaffected.

Figure 7



EFFECT OF REPEATED WASHING ON THE PRECISION OF RESULTS

Results Obtained

The sensitivity and precision of the photometer make it useful in a wide variety of dishwashing studies. But extreme sensitivity imposes certain limitations.

Dust motes or finger smudges on the glass plates can drive the meter off scale. Because of this high sensitivity rubber gloves are used in handling the edges of the test specimens. Lint and dust are removed from the standards and test specimens by means of a soft phonograph record dust brush having a polonium strip to dissipate electrostatic charge. To permit the measurement of heavy deposits a range switch reduces the bridge sensitivity by a factor of nine is provided.

The intrinsic precision of the instrument was determined by having different operators make repeated measurement of several plates. The standard deviation for 20 measurements was less than ±1.3 scale units (Fig. 8).

For each test plate the deposition value is the sum of the instrument readings for the front and back sides of the glass plate. When six plates are used in a test, the deposition value is represented by the average value for the six

(*Turn to Page* 101)

New dynamic method of

Detergent Foam Measurement

Novel, improved apparatus measures foam of detergents under conditions resembling actual use, yields reproducible results, is versatile, inexpensive and easy to operate

By Henry E. Reich,* John T. Patton, Jr. and C. V. Francis,
Wyandotte Chemicals Corp.,
Wyandotte, Mich.

HISTORICALLY, detergency was associated with high foam levels to the extent that detergency and foam became synonymous. However, with the advent of mechanical washers for cleaning operations, some situations have arisen where foam is an objectionable feature of detergents. This is especially true in automatic laundry and dishwashing machines that produce a high degree of agitation. In such machines, excessive foam interferes with the cleaning operation and frequently stalls the machine or causes overflow. In order to provide suitable formulations for use in such machines Wyandotte and other surfactant producers have developed new, low foaming surfactants.

In the development of such surfactants the accurate measurement of differences in the foaming of these products became desirable. Further, it was desirable to make these measurements under conditions resembling those of actual use. The existing methods of foam measurements were, for the most part, developed for the evaluation of high foaming surfactants under static conditions.

We designed and have used for several years a novel device for the comparison of low foaming surfactants under dynamic conditions. Although primarily intended to emphasize the differences among very low foaming products, this device can be operated so as to permit measurement of the foam characteristics of higher foaming surfactants.

Apparatus

A schematic diagram of the apparatus used in making foam measurements on low foaming surfactants is shown in Fig. 1. To evaluate the foam properties of a surfactant, 10 liters of an aqueous solution of the surfactant is prepared in the 10″ x 10″ "Pyrex" jar (1). The jar is equipped with a disperser-agitator (8), immersion heaters (9), a thermoregulator (10), and a thermometer (11). A self priming centrifugal pump (3) is arranged to circulate the surfactant solution through a calibrated glass flowmeter (4) to a jet orifice (5). The jet is mounted coaxially inside a graduated 51 mm. x 910 mm. "Pyrex" tube (6) which is placed vertically in the surfactant solution. The jet is positioned so that it is 600 mm. above the surface of the solution in the jar and the "Pyrex" tube is arranged to project 210 mm. below the surface of the solution.

The solution is brought to the desired temperature by the im-

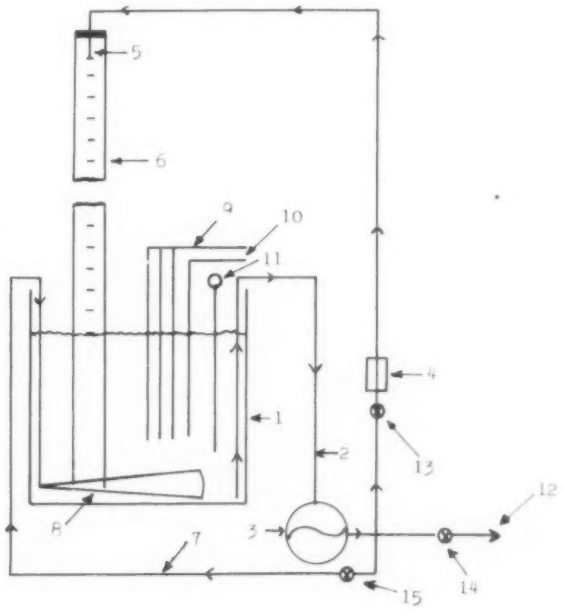


Fig. 1. Schematic drawing of Dynamic Foameter: 1. "Pyrex" jar: 2. Intake line: 3 Pump: 4. Flowmeter: 5. Jet: 6. "Pyrex" tube: 7. By-Pass line: 8. Disperser-agitator: 9. Immersion heaters: 10. Thermoregulator: 11. Thermometer: 12. Drain: 13, 14, 15. Valves.

*Paper presented at annual meeting of Committee D-12 on Soaps and Other Detergents (ASTM), New York, March 6.

mersion heaters and is maintained at this temperature by means of the thermoregulator. The centrifugal pump is started and the desired rate of flow through the jet is obtained by adjusting valve (13). The excess flow from the centrifugal pump is directed through the by-pass line (7) back into the reservoir through the disperser-agitator (8) in order to provide mixing of the solution. The disperser-agitator is a coil of copper tubing in which holes have been drilled along the inner periphery. The solution by-passing the jet returns to the reservoir through the coil and the solution escaping through the many holes provides agitation in the reservoir. While the flow is being adjusted and the temperature equilibrated the solution passing through the jet is directed against the wall of the vertical tube to prevent foaming prior to the start of the actual determination. The jet is then arranged to pass the solution coaxially downwards through the tube without touching the tube walls so as to impinge upon the surface of the solution.

Timing is initiated from the instant the solution impinges on the liquid surface and the foam height is recorded at intervals until maximum foam height is reached. The foam height is read as millimeters of foam from calibrations on the outside of the "Pyrex" tube, zero level being the surface of the solution. If the foam height exceeds 600 mm. the measurement is repeated at other flow rates until a flow rate is found at which the height of the foam generated does not exceed 600 mm. The foam height of the surfactant is recorded as millimeters of foam at the flow rate and temperature at which the measurement is made.

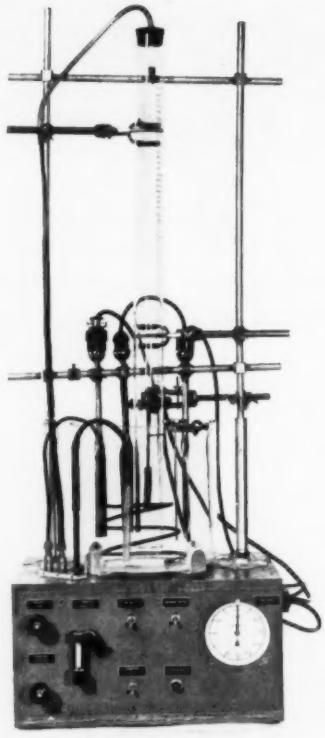


Fig. II. Dynamic Foameter

A photograph of the apparatus as it has been constructed at Wyandotte is reproduced in Fig. II. On the control panel are located the by-pass flow and drain valves, the flowmeter and control valve, the switches for the heaters and the pump, and a timer.

The most critical factor in the construction of this apparatus was the design of the jet. An essential characteristic of the jet is that it produces a *stream* of solution rather than a spray. A spray reduces the force with which the solution impinges upon the surface below and tends to collapse the foam column by its wetting action along the surface of the measuring tube. After investigation of several jet designs, we decided on a system which combines ease of construction, reproducibility, ready availability and low cost. Our jet is constructed from the base of a No. 20 Becton, Dickinson and Company hypodermic needle by removing the needle from the base and enlarging the hole in the base with a No. 56 twist drill.

Reproducibility of jet construction is illustrated in Table I. Foam heights were determined on two surfactants of different foam characteristics using four jets made in the prescribed manner. In one case, the foam height of a low-foaming experimental surfactant was measured at a flow rate of 350 ml. per min. at 120° F. The values obtained with the four jets were 13, 12, 12, and 13 mm., respectively. With "Pluronic"* P 65, a higher-foaming nonionic surfactant,

Table I. Uniformity of Jets (0.1% Conc., 120° F.)

"Pluronic" surfactant	Flowrate (ml./min.)	Comparison of Jets (Foam heights, mm.) 1	2	3	4
Experimental	350	13	12	12	13
P65	175	475	480	475	485

Fig. III. Foam measurements of varied surfactant types (0.1% conc., 120°F., 75 ml./min. flow rate)

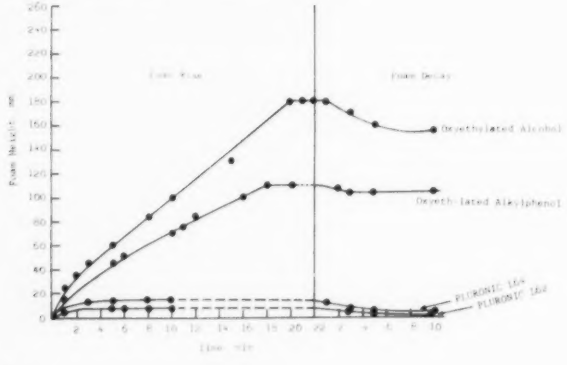
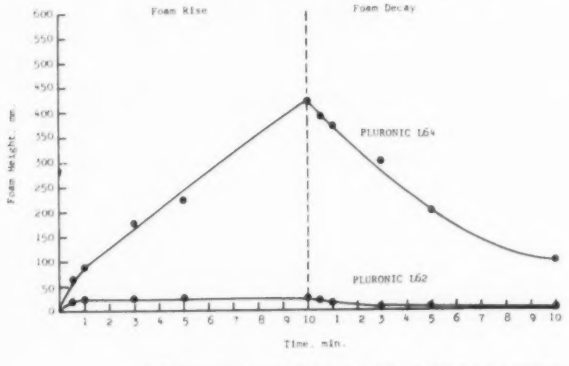


Fig. IV. Enhanced differentiation between low foaming surfactants (0.1% conc., 140°F., 350 ml./min. flow rate)



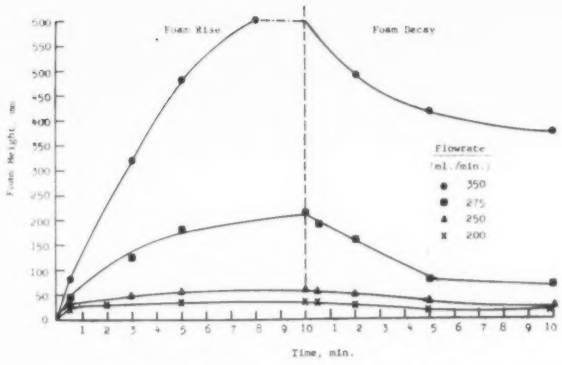


Fig. V. Effect of flow rate on foam height (0.1% conc., 120° F., "Pluronic" surfactant L64)

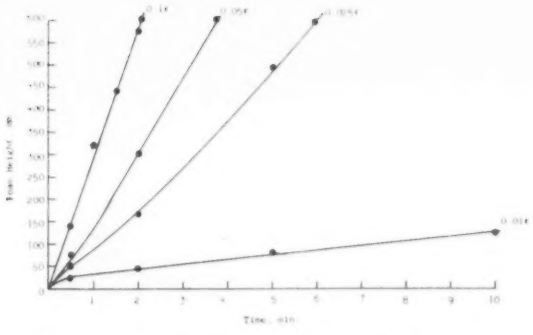


Fig. VI. Effect of concentration on foam height and rate of rise ("Pluronic" P66, 120° F., 400 ml./min. flow rate)

values of 475, 480, 475 and 485 mm. were obtained at a flow rate of 175 ml. per min. at 120° F. Experience with this apparatus has shown that replicate determinations of foam height of low foaming surfactants give values which agree within ± 2 mm. and that values which agree within ± 15 mm. can be obtained for higher-foaming surfactants.

The ease with which the conditions of foam measurement can be varied and controlled makes this apparatus extremely versatile. For example, by selecting a suitable flow rate, the foam heights of various surfactant types can be compared. Fig. III compares the foam height of low foaming nonionic surfactants, as exemplified by "Pluronic" L 62 and L 64, with the foam heights of higher-foaming conventional types of nonionic surfactants.

By increasing the flow rate, the differences among the foam heights of surfactants can be emphasized. Fig. IV illustrates the enhancement of the foam levels of "Pluronic" L 62 and L 64, thereby permitting a more accurate comparison of their foaming tendencies. At a flow rate of 75 ml. per min. at 120° F. these surfactants had foam heights of 6 and 13 ml., respectively. When the flow rate was increased to 350 ml. per min. at 140° F. the foam heights of these compounds were 25 mm. and 120 mm.

*Registered trade name of Wyandotte Chemicals Corp.

Effect of Variables

The effect of variables such as flow rate, concentration of solution, and temperature on foam heights has been investigated. An increase in the first two of these factors increases the foam height. In the case of nonionic surfactants, increases in temperature raise the foam height until a maximum is reached. Thereafter, as the temperature of the test solution approaches or exceeds the cloud point of the surfactant, the foam level decreases.

The effect of flow rate on foam heights is shown in Fig. V. By increasing the flow progressively from 200 to 350 ml. per min., foam heights of from 35 to in excess of 600 mm. can be obtained.

In Fig. VI the effect of detergent concentration upon foam height is presented. Foam heights of solutions of "Pluronic" P 66 of varied concentrations were measured at a flow rate of 400 ml. per min. at 120° F. While at three of the four concentrations measured foam levels exceeding 600 mm. were obtained, the time required for reaching this foam height increased with decreased concentrations.

Effect of temperature on foam heights of "Pluronic" surfactants L 62 and L 64 is demonstrated in Fig. VII. Foam levels of these surfactants rise with increases in temperature until a maximum height is reached at 120° F. Further increases in temperature give progressively lower foam levels.

The data we have presented demonstrate that by selection of suitable conditions the apparatus described herein can be used for the measurement of foam characteristics of varied surfactants and surfactant types.

In addition to foam levels, relative foam stabilities and the rate of foam decay can also be

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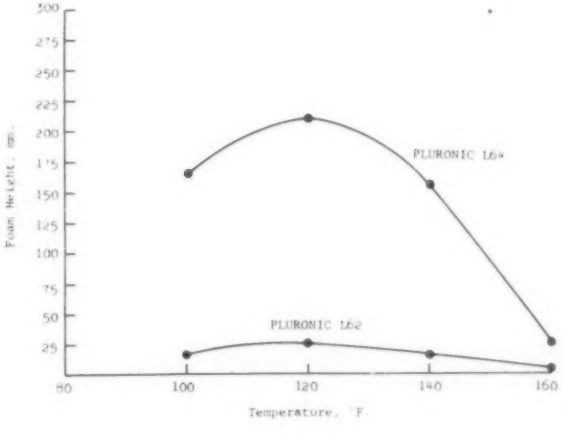

Fig. VII. Effect of temperature on foam height (0.1% conc., 275 ml./min. flow rate)

New Detergent/Sanitizers

By C. F. Moculeski*, O. E. Libman and Loretta Ciszak,
Clintwood Chemical Co.,
Chicago, Ill.

THE formulation of germicidal detergents with phenolics, such as "Santophen I"** has been limited to the use of soaps or a number of anionic surface active agents. Nonionics and alkanolamides, which are used extensively in hard surface cleaners, interfere with the germicidal activity of the phenolics. The latter phenomenon has been reported in the literature as a reaction occurring with most phenolic germicides and preservatives when these are used in conjunction with polyoxyethylene fatty acid esters (1) and the ethoxylated phenols. Beckett and Robinson (2) have written an excellent review on this subject and have documented well the previous work in this field. More recently Mizuno, Rogers and Kaplan (3) reported such interference in the process of developing a general purpose disinfectant for military use.

Experimental work in the present development was initiated by determining the phenol coefficients of a coconut oil alkanolamide, such as is used in hard surface cleaners, and of a typical coconut fatty acid alkanolamide to confirm the previously reported interference using *Micrococcus pyogenes var. aureus* F.D.A. 209, A.T.C.C. No. 6538 (*Staph. aureus*) as the test organism. Phenol coefficient data were obtained using the method described in "Official Methods of Analysis of the A.O.A.C., 8th Ed. (1960).

The data in Figure 1 indicate growth at the most concentrated dilution (1/100) of a mixture originally containing 5 parts "Santophen I" in 10 parts alkanolamide after 15 minutes contact.

Figure 1.

Phenol Coefficient of Typical Alkanolamides with "Santophen I" (Staph. Aureus)

	Parts
Alkanolamide	10
"Santophen I"	5
Water	83
Isopropanol	2

Diethanolamide of Coconut Oil

Dilution	5 min.	10 min.	15 min.
1/100	+	+	+
2/200		+	+

Diethanolamide of Coconut Fatty Acids

1/100	+	+	±
2/200	+	+	±

Phenol

1/60	O	O	O
1/70	+	+	O

After a series of tests with a number of alkanolamides formulated in a hard surface cleaner the following was selected as having freeze-thaw stability and exhibiting good detergency.

Germicidal Hard Surface Cleaner

	Parts
Alkanolamide 29 B	12.5
"Santophen I"	4.0
Trisodium phosphate	3
Tetrasodium pyrophosphate	2
Water	78.5

The alkanolamide is the solvent for "Santophen I." This germicidal cleaner would be used at a dilution of from 1/15 to 1/40 for cleaning floors.

Tests with *Micrococcus pyogenes var. aureus* on the detergent aged 72 hours indicated a phenol coefficient of 4.6. These results are indicated in Figure 2.

Figure 2. Phenol Coefficient of Hard Surface Cleaner, Aged 72 Hours

Dilution	5 min.	10 min.	15 min.
1/200	O	O	O
1/250	+	O	O
1/300	+	O	O
1/350	+	+	+

$$\text{Phenol Coefficient} = \frac{300}{65} = 4.6$$

The same detergent aged six weeks exhibited a phenol coefficient of 3.8 and after seven months a value of 3.6 was obtained. The slight drop is within experimental error. Perhaps of greater significance are the data indicating complete absence of microbiological growth was obtained within five minutes at a dilution of 1/200 throughout the aging period as shown in Figure 3 and 4.

*Paper presented at 47th annual meeting, Chemical Specialties Manufacturers Association, Hollywood, Fla., Dec. 6, 1960.

**Registered trade mark of Monsanto Chemical Co.

Figure 3. Phenol Coefficient of Hard Surface Cleaner, Aged 6 Weeks

Dilution	5 min.	10 min.	15 min.
1/200	O	O	O
1/250	+	O	O
1/300	+	+	+

Phenol Coefficient (Staph. aureus) $\frac{250+3.8}{65}$

Figure 4. Phenol Coefficient of Hard Surface Cleaner, Aged 7 Months

Dilution	5 min.	10 min.	15 min.
1/200	O	O	O
1/250	+	O	O
1/300	+	+	+

Phenol Coefficient $\frac{250=3.6}{70}$

The detergent formula exhibited greater germ killing ability with *Salmonella typhosa* (Hopkins strain 26. (zoph) Weldin, F.D.A., A.T.C.C. No. 6539) as the test organism. A phenol coefficient of 7.5 was obtained on both 72 hour and seven months aged samples. In both instances complete kill was obtained within five minutes at a dilution of 1/500. These data are included in Figure 5.

Figure 5. Phenol Coefficient of Hard Surface Cleaner Salmonella Typhosa. Aged 72 Hours

Dilution	5 min.	10 min.	15 min.
1/500	O	O	O
1/600	+	O	O
1/700	+	+	+

Aged 7 Months

1/500	O	O	O
1/600	+	O	O
1/700	+	+	+

Phenol Coefficient $\frac{600+7.5}{80}$

Use dilution tests on the germicidal detergent conducted according to the A.O.A.C. method (8th Ed. 1960) are in progress and initial results indicate no growth at 1/50 (A.T.C.C. 10708) with *Salmonella choleraesuis* as the test organism.

Upon the basis of phenol coefficient tests it appears that a germicidal hard surface cleaner formula has been developed with an alkanolamide which does not adversely affect the bactericidal properties of "Santophen I" for at least a seven months aging period. Use dilution tests with *Salmonella choleraesuis* appear to be satisfactory and those with *Staphylococcus aureus* are in progress.

It is possible that other phenolic germicides may function satisfactorily in such a formula and that variations may be made with this alkanolamide. Such variations remain to be investigated.■

Acknowledgement

Bacteriological tests conducted by Colburn Laboratories, Chicago.

References

1. Erlanoson, Jr., A. L. and Lawrence, C. A, *Science 118*, 274 (1953).
2. Beckett, A. H. and Robinson, H. E., *Soap, Perfumery and Cosmetics, 31*, 454 (1958).
3. Mizuno, Wm. G. Rogers, M. H., and Kaplan, A. M., *Soap, & Chemical Specialties, 35*, No. 1, 99 (1959).

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Glycerine Production Up

According to a recent report by the U. S. Department of Commerce, production of crude glycerine (including synthetic) for the month of November, 1960 was 24.2 million pounds, down 1.4 million pounds from October, and down 100,000 pounds from crude production reported for November 1959. Production for the first eleven months of 1960 totalled 280.8 million pounds, compared with 243.7 million pounds for the same period the previous year.

At the end of November, crude and refined glycerine stocks in the hands of producers totalled 53.3 million pounds, up 2.2 million pounds from October, and up 20.2 million pounds from the end of November, 1959.

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Tall Oil Panel

In 15 years, the production of tall oil fatty acids "has zoomed from practically nothing to a current annual rate of 150 million pounds."

This statement was made by a panel representative of the Pulp Chemicals Association discussing "Tall Oil Products in the Markets of the 60's," before a recent meeting of the Northeast Section of the American Oil Chemists' Society, New York. Speakers included J. M. Wafer, vice-president, West Virginia Pulp and Paper Co., New York; J. H. Ruskin, president, Arizona Chemical Co., New York; C. W. Eurenius, assistant general manager, paper makers chemical dept., Hercules Powder Co., Wilmington, Del., and D. R. Eagleson, assistant sales manager, Emery Industries, Inc., Jersey City, N. J. The panel moderator was D. E. Campbell, secretary of the Pulp Chemicals Association.

The panel spotlighted the growing market for tall oil fatty acids in the soap, emulsifier and synthetic detergent field. In the past few years the advent of household pine cleaners has caused a sharp increase in the usage of these materials. In standard soap products tall oil fatty acids are historically competitive with traditional fats and oils.

Despite the overall satisfactory picture of tall oil products in the markets of the 60's, a cautionary note was introduced by a speaker who stated that although the pulp and paper industry is contributing greatly to the overall production of rosin, it would appear "that the revival of the gum naval stores industry will be essential to provide the major source of rosin in the future."

New alkanolamide that is compatible with phenolic germicides permits formulation of novel type detergent-santizers for hard surface cleaning. Detergency found good.

New Aerosol Perfume Lab

Vincent DeFeo, director of D&O's aerosol division, with Helen Lampropolos, aerosol technician, examine aerosol product stored in accelerated aging chamber. Unit provides information on product's shelf life, corrosion characteristics, compatibility, heat stability and other data on finished product in pressure package.

WHEN 162-year-old Dodge & Olcott, Inc., New York perfuming and flavoring materials firm moved into new quarters on the seventh floor of Manhattan Industrial Center, 79 Ninth Ave., a major portion of the firm's research laboratories included a modern, fully-equipped laboratory for aerosol products. Other areas of D&O's new home house a large perfume laboratory for developing new fragrances for soaps, detergents, toiletries and a wide variety of chemical specialties. In addition to a large perfume "organ," the research section of the laboratories includes a spacious area for flavor products.

The new D&O headquarters, directly across Ninth Avenue from parent company, Fritzsche Brothers, Inc., were formally dedicated at a reception for the press and customers of D&O on March 1. On hand for the opening, too, was the national sales force of the firm, headed by Kenneth W. Hartley, D&O vice-president and sales manager. Fred H. Leonhardt, president of D&O, headed the list of executives of the firm present at the reception.

Besides perfuming and flavor laboratories, the new D&O headquarters houses general offices, executive offices and a printing department.

Dodge & Olcott, generally regarded as the oldest American firm in the perfuming materials field, and one of New York's oldest companies, was formerly headquartered at 180 Varick St.

Top right: Gertrude Freeze, cosmetic technician for D&O confers with Helen Lampropolos in aerosol perfuming laboratory. Mr. DeFeo, director of the aerosol division, is seated at desk.

Bottom left: Mr. DeFeo loads propellant into flask in aerosol research laboratory. Freezing cabinet, background, chills propellant and is used for storing finished aerosol products.

Bottom right: Miss Lampropolos inserts aerosol container in mixing device used to blend less soluble propellants.

A comparison of

Quaternaries and Amphoterics

Sustantivity to many substrates exhibited by quaternaries and pH dependence of the amphoterics open wide scope for novel uses

By D. L. Andersen*,
General Mills, Inc.,
Minneapolis, Minn.

QUATERNARY ammonium compounds and amphoteric surface active agents are related, yet they are different in their properties, and in their uses. Table 1 outlines some of these differences and similarities. Quaternaries are nitrogen based, as are most amphoterics. Both are highly surface active. Both are salts. Both form monomolecular films. On the other hand, they differ widely in compatibility, foaming, detergency, etc.

A number of uses for quaternaries have achieved commercial significance only fairly recently. Similarly, amphoterics have been commercially available only in the last five or six years. Because of this relative newness, this discussion will supply some fairly basic information.

Table 1. Comparison of Quaternaries and Amphoterics

Quaternaries	Amphoterics
1. Salt form.	1. Salt form.
2. Relatively nonirritating.	2. Relatively nonirritating.
3. Form monomolecular films.	3. Form monomolecular films.
4. Moderate foam.	4. High foam.
5. Limited compatibility.	5. Broad compatibility.
6. Specialized detergency.	6. General detergency.

Chemistry

The classical quaternary ammonium molecule and several conventional syntheses, together with typical substituents, appear in Fig. 1. The commercially important surface active quaternaries, in which at least one "R" group is a fairly large non polar group, range in complexity from the simple mono-fatty trimethyl ammonium chloride (one "R" is fatty derived, the other three are methyl groups), through the fatty (mono- or di-) benzyl quaternaries, and to complex heterocyclic quaternaries or polyoxy-ethylated derivatives.

Despite the broad range of their possible structures, all quaternaries share a fundamental electrochemical property; they dissociate to form a relatively large cation and a relatively small anion. The configuration of this cation (large non polar groupings around a small highly polar nitrogen atom) and its orientation at interfaces (air/water, oil/water, water/solid) produces the broad property of surface activity.

Chemistry and properties of the amphoterics are more complex. Fig. 2 shows two of the more important types of amphoteric molecules. A basic definition is in order here: Webster defines "amphoteric" as deriving from the Greek amphoteros (both), and gives the specific chemical meaning: "capable of reacting either as electropositive or as electronegative." Structurally, this demands that an amphoteric molecule contains at least one cationic grouping (sometimes more than one, and usually nitrogen based) and at least one anionic grouping (often more than one, and usually carboxylic, although they can be sulfonic, phosphoric, etc.) It is this combina-

Figure 1. Quaternaries

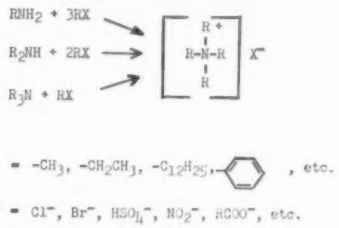
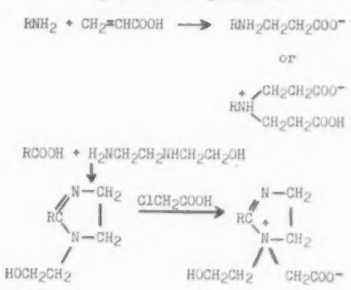


Figure 2. Amphoterics



*Paper presented at annual convention of Association of American Soap & Glycerine Producers, New York, Jan. 26.

tion of polar groups (anionic and cationic) with long chain non polar groups (usually fatty derived) which result in the surface active properties of the amphoteric detergent.

Typical amino/carboxylic amphoterics are the fatty amino acid derivatives. Generally, these are prepared by the condensation of a fatty amine (usually a primary amine and an α,β-unsaturated monomer (acrylic acid depicted here). They may also be prepared through the haloacid route.

The second general type of amphoteric is prepared by derivation, with chloroacetic acid for example, of a fatty imidazoline to yield a quaternary/carboxyl amphoteric.

By far the most important single factor (aside from the broad property of surface activity) in understanding the performance and application of amphoteric molecules is the factor of pH dependence. Conventional surfactants are affected by pH usually only in so far as their solubility is changed—an anionic might precipitate in its acid form, a non-ionic might be salted out by a high concentration of alkali. A typical broad spectrum amphoteric, on the other hand, is soluble in strong caustic and in mineral acid solutions. More important—the amphoteric performs in both acid and alkali, often exhibiting quite different properties at one end of the pH scale than at the other. The pH dependence of a typical amphoteric is shown in Fig. 3. The amphoteric is present in alkaline solution as an anionic carboxylic derivative; in acidic solutions, it is present as a cationic amino compound; and in the neutral range, it is present in a hybrid structure. It is in this neutral range that these products exhibit many of their more interesting properties—they are neither anionic nor cationic, but a combination or simply amphoteric (apparently the Greeks did have a word for it).

Applications

Quaternary ammonium compounds have the ability to adsorb on many surfaces. They are highly substantive to cellulosics, clay, glass, rayon and most generally hydrophilic substrates. The positively charged quaternary ammonium ions are attracted to a negatively charged surface (such as clay or cotton) and are oriented at that surface, held there by strong electrochemical forces. Textile softening, prevention of static charge buildup, and the use of quaternaries as textile processing adjuncts, glass fiber lubricants, and to increase resistance to mildew and bacteria utilize this fundamental property of substantivity. Other factors are important also: Feel or "hand", lubricity, absence of yellowing, and good rewetting—to name a few of importance in textile softening; toxicity to the organism in biocidal applications; or charge concentration in antistatic uses.

Textile softener consumption is increasing substantially. There are numerous difatty quaternary based home laundry softeners on the market. Quaternary softeners have found wide acceptance in commercial and institutional laundries. Quaternary ammonium compounds are used widely in the textile processing industry as auxiliary softeners in conjunction with normally harsh finishing agents, such as antistatic agents, and as glass fiber lubricants. Currently, they are of interest for their possible mildew resisting, moth proofing, and germicidal properties in conjunction with softness as a finishing agent.

The problems of fabric yellowing and waterproofing are very familiar to the formulator and the user of textile softeners. In some cases, they are simply caused by misuse (overdosing) resulting in excessive buildup of the strongly adsorbed softener. Research effort continues on development of materials and formulations resistant to buildup but still providing adequate softening. These efforts appear to be along two lines: auxiliary additives to improve rewetting, and modification of the softening molecule itself.

The use of quaternaries as preservatives in cosmetic formulations is well known. Quaternary disinfectants are widely accepted in the pharmaceutical field and in the industrial cleaning field. Detergent-sanitizers (combinations of quaternaries and a hard surface cleaner) combine excellent cleansing with residual bactericidal protection.

The combination household laundry detergent—clothes softener—disinfectant is a gleam in many a researcher's eye. There is little question that a tremendous market exists for the successful formulation.

Markets for amphoteric surface active agents have developed only within the past few years, and to those of us directly in the field, growth has seemed disappointingly slow. Currently, amphoterics are used in cosmetic formulations (principally shampoos), heavy duty alkaline cleaners (steam cleaners, floor cleaners), and as freeze-thaw stabilizers for latex based paints. Somewhat newer, but receiving increasing interest, are developments in emal-

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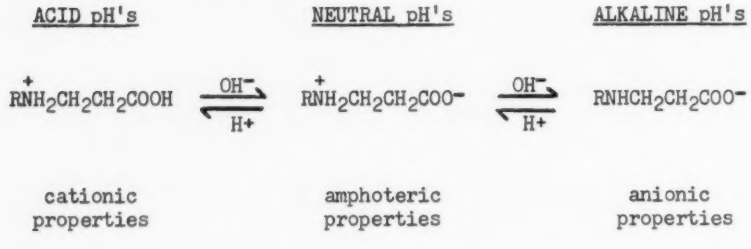
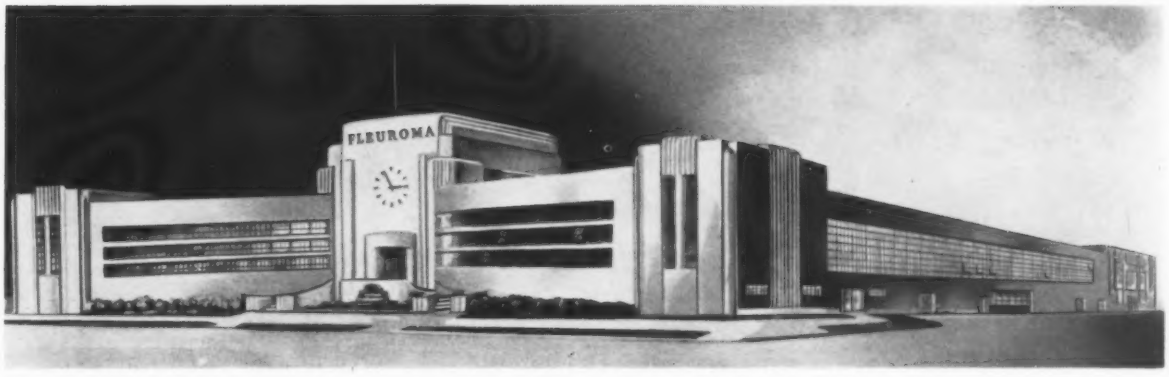
Figure 3. pH dependence of amphoterics





Artist's rendering of new headquarters of Fleuroma, Inc., 42-23 Dreyer Avenue, Long Island City, N. Y. Plant, formerly a laundry, provides 90,000 square feet of floor space, with over 40,000 feet available for growth.

Fleuroma Fragrances New Home

COMPLETION of its new headquarters in Long Island City, N. Y., just across the East River from New York City, was announced recently by Fleuroma, Inc., 16-year old producer of perfuming materials for soaps, detergents, toiletries and a wide variety of chemical specialties. This fast-growing firm acquired its new home, previously occupied by Knickerbocker Laundry, early in 1960, to relieve the shortage of space at its former location at 38 W. 21st St. in New York City. The 90,000 square feet provided by the new headquarters at 42 Dreyer Ave., Long Island City, is close to four times greater than the space occupied by the firm on four floors at its previous location.

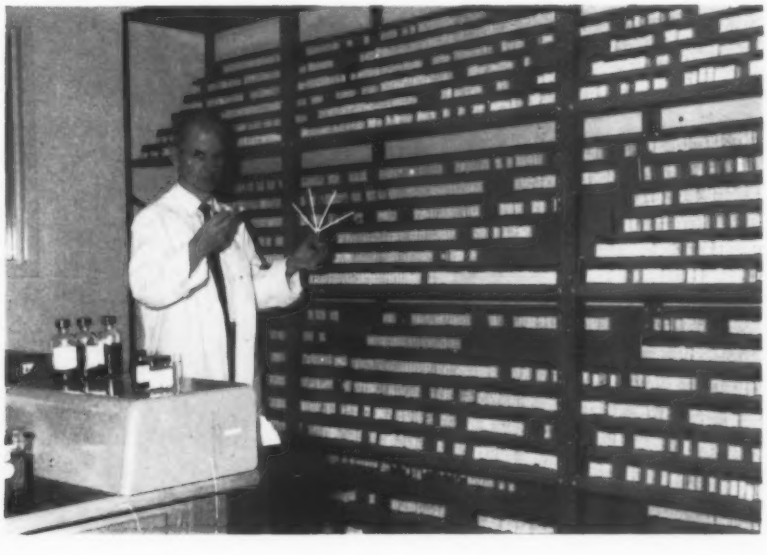
To convert the former laundry building into manufacturing facilities, laboratories and offices was a mammoth undertaking. The new plant was completely remodelled and air-conditioned throughout. This work has now been completed, nearly six months after Fleuroma officially began operations at the new location.

Founded in 1946 by Walter Lengsfelder and E. Kees Poons as equal partners, Fleuroma began its career in rented space in a loft building on Sullivan St. in downtown New York City.

By 1951, Fleuroma had outgrown these quarters and purchased a 12-story building at 38 W. 21st St. In the beginning the firm occupied only 12,000 square feet

Jean Paul Baude, perfumer-products manager, sniffs new aerosol formulation enhanced by a Fleuroma fragrance, of course.

George Neil, "Nose" of Fleuroma, and quality control head, makes a final check on a sample of a compound about to be shipped. Samples of other compounds and of raw materials line shelves on Mr. Neil's left.



on two floors. As Fleuroma's operation expanded, however, it was necessary to utilize an additional two floors, bringing its total space to about 25,000 square feet. By 1958, it became apparent that Fleuroma could not solve its problems by continuing expansion to additional floors of the building, and a search for new quarters began.

Currently, Fleuroma's operation covers 28,000 square feet of production space; 6,000 square feet are for research, and 5,000 square feet are devoted to perfume laboratories. Executive and general office space covers another 7,000 square feet. An additional 40,000 square feet are available for future expansion.

One of the few American-owned companies in the perfuming materials field, Fleuroma operates sales offices in Paris and London, and has a manufacturing plant in Sao Paulo, Brazil, for products sold in that country. In addition to a staff of seven salesmen in the United States, Fleuroma employs five perfumers, each with at least 25 years' experience in the field. Its staff of perfumers is headed by Walter Lengsfelder in dual capacity of president and chief perfumer. George Neil, who answers directly to Mr. Lengsfelder, also is responsible for quality control of all incoming raw material supplies and outgoing orders.

Dr. Jerome Kaufman is director of Fleuroma's research laboratory, and Jean Paul Baude, a perfumer for 30 years, is production manager.

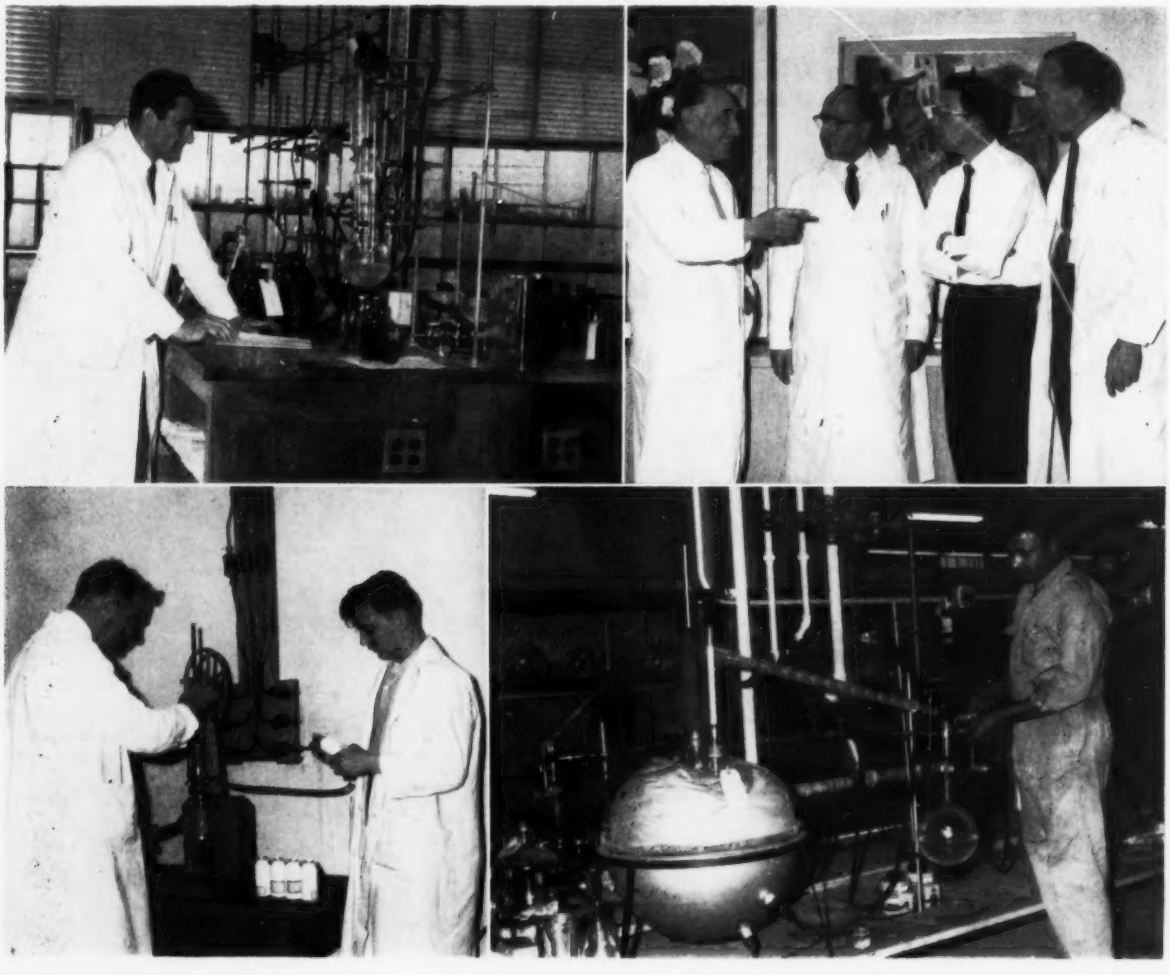
Other Fleuroma executives include Walter Lengsfelder, president and chief perfumer; E. Kees Poons, secretary-treasurer; A. E. Eisenkraft, sales manager, and Fred L. Van Aalst, controller.

Top left: Dr. Jerome Kaufman, director of Fleuroma's research laboratory, whose job it is to develop new aromatic chemicals. Patience is a must for this tedious and time-consuming job.

Lower left: John Day, Fleuroma technician, left, fills an aerosol frangrance, as Theodore Gustafson looks on.

Top right: Fleuroma's top management team, left to right, Walter Lengsfelder, president and chief perfumer; E. Kees Poons, secretary and treasurer; A. E. Eisenkraft, sales manager, and Fred L. Van Aalst, controller.

Bottom right: Isiah Gourdine checks vacuum distillation apparatus in production laboratory. The 50 kilo still, left, is encased in pressure jacket.



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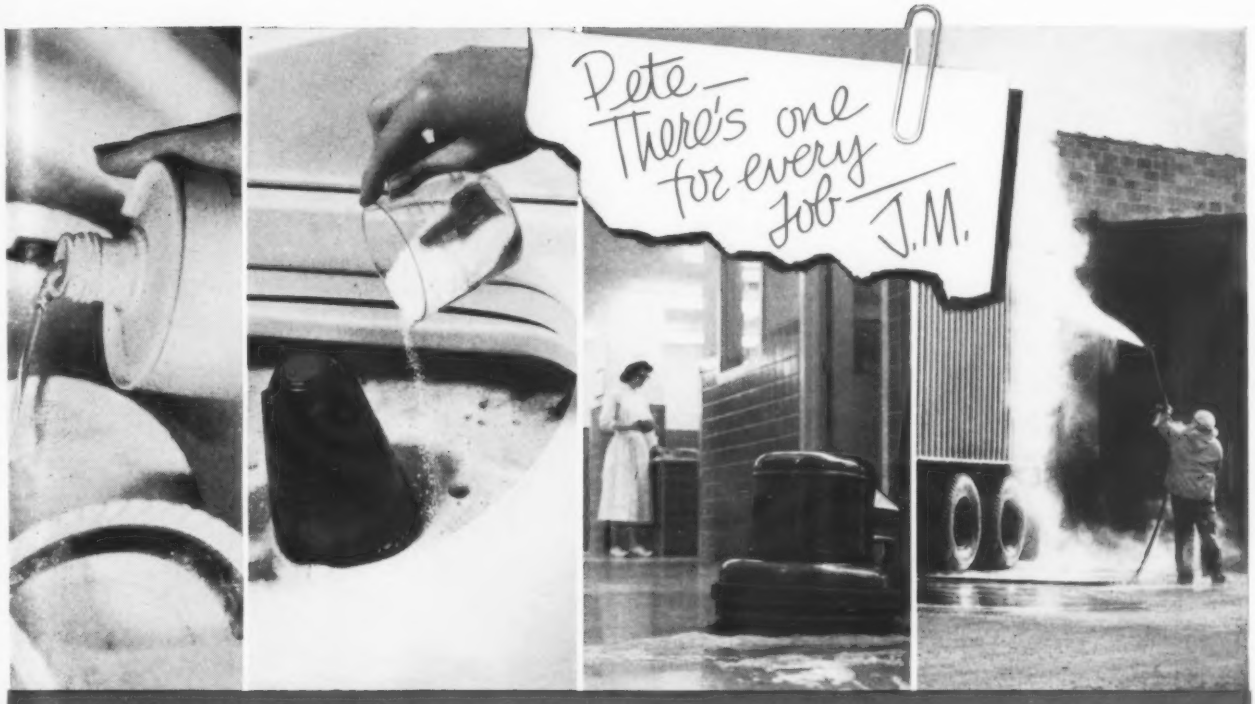
	Ultrawet	Solids	Molecular Weight	Appearance	Active Minimum	Recommended Applications
LIQUIDS						
Clear	30DS	30%	Medium	Clear, pale yellow	25.5%	Penetrant, wetting agent, metal cleaner, emulsion polymerization.
	60L	60%	High	Clear, pale yellow	60.0%	Liquid detergents, wet textile processing, shampoos, car wash, household detergent formulations, janitorial supplies.
	35KX	35%	Medium	Clear, pale yellow	31.5%	Liquid detergents and household cleaners, wet textile processing, emulsion polymerization, post stabilizer for emulsions.
Slurries	35K	35%	High	Pale yellow	31.5%	Drum-dried and spray-dried cleansing compounds, light and heavy duty liquid detergents.
FLAKES	DS	100%	Medium	Light, cream colored	90%	Industrial detergents, emulsifier, dry mixing with alkalies, air entraining agent.
	K	100%	High	Light, cream colored	90%	Industrial detergents, heavy-duty household detergents, emulsifier, dry mixing with alkalies.
	K Dense	100%	High	Light, cream colored	90%	Same as above.
	KX	100%	Medium	Light, cream colored	90%	Same as 35KX in dry form.
	KX Dense	100%	Medium	Light, cream colored	90%	Same as KX—except smaller particle size with increased density, air entraining agent.
BEADS	SK Bead	100%	High	White, free flowing	40%	Light-duty household detergents, dry mixing with alkalies.
	SK Bead High Density	100%	High	White, free flowing	40%	Same as above—synthetic wool washes, air entraining agent.



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3 Light Color. The excellent, light colors of Atlantic Ultrawets produce better color and better color control of all finished products.

4 Freedom from Odor. Atlantic Ultrawets have minimum odor resulting in greater shelf-life odor stability.

Chemically the Ultrawets are alkyl aryl sulfonate type anionic surface-active agents with less than 0.1% unreacted oil content. They are stable in acid and alkaline media; and their low sensitivity to calcium, magnesium, and other heavy metal ions makes them especially desirable in hard water. They are compatible with acid, alkaline, and neutral salts, soaps, anionic and nonionic detergents, and other materials commonly used in household and industrial cleaning compounds.

You are invited to consult Atlantic's experienced sales engineers, graduate chemists and chemical engineers especially trained in formulations employing any of Atlantic's great variety of Ultrawets. Without obligation, you will receive technical assistance and information to improve products or processes, or for developing new applications, or for new ways to cut manufacturing costs. Write to Chemicals Division, The Atlantic Refining Company, 260 South Broad Street, Philadelphia 1, Pa.

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Typical of wide variety of tests on antifreeze conducted at the Dow automotive chemicals laboratory is this simulated motor test. Test stands operate much like an automotive cooling system and are used to check corrosion over six-weeks period. Article on automotive specialties starts on page 77.

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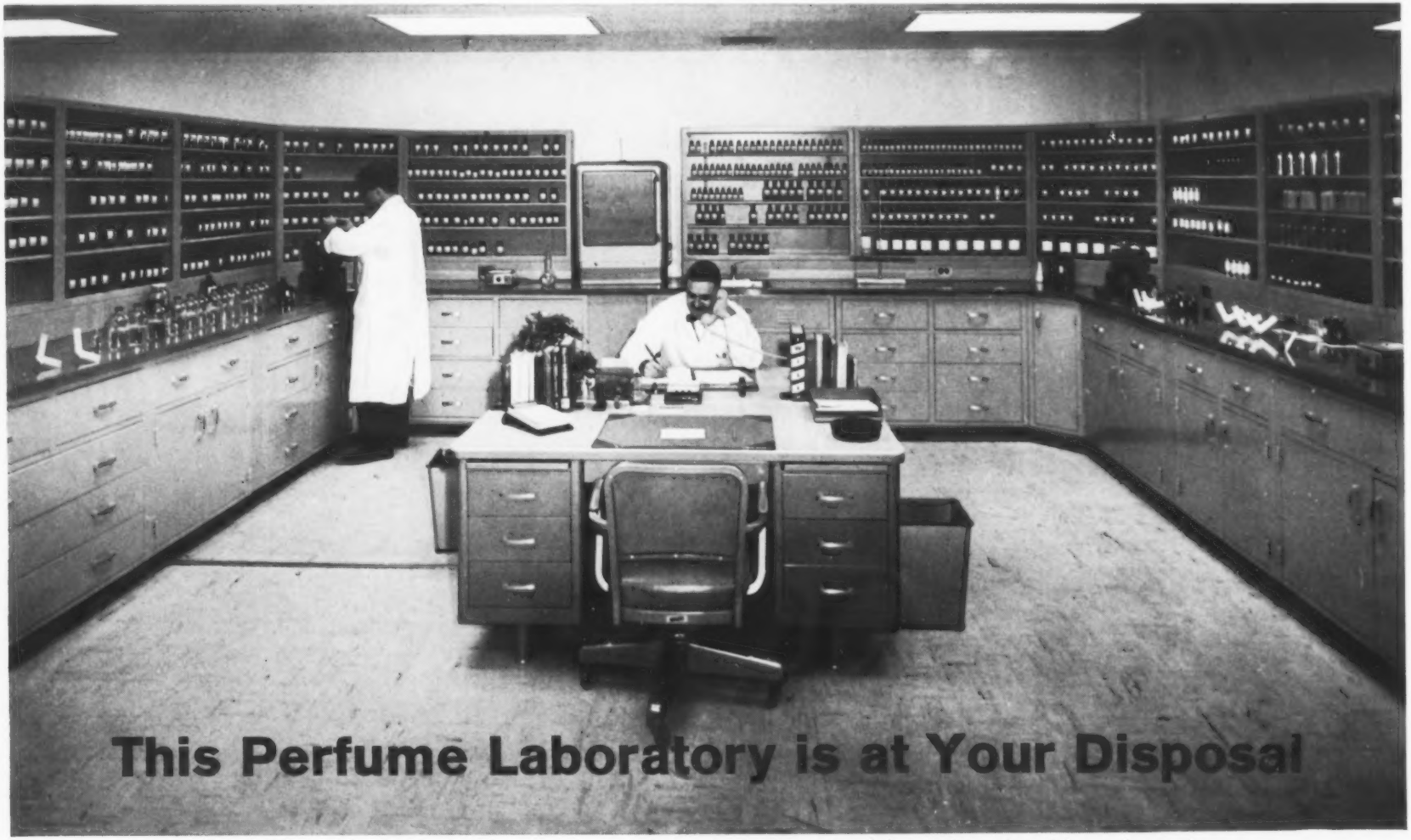

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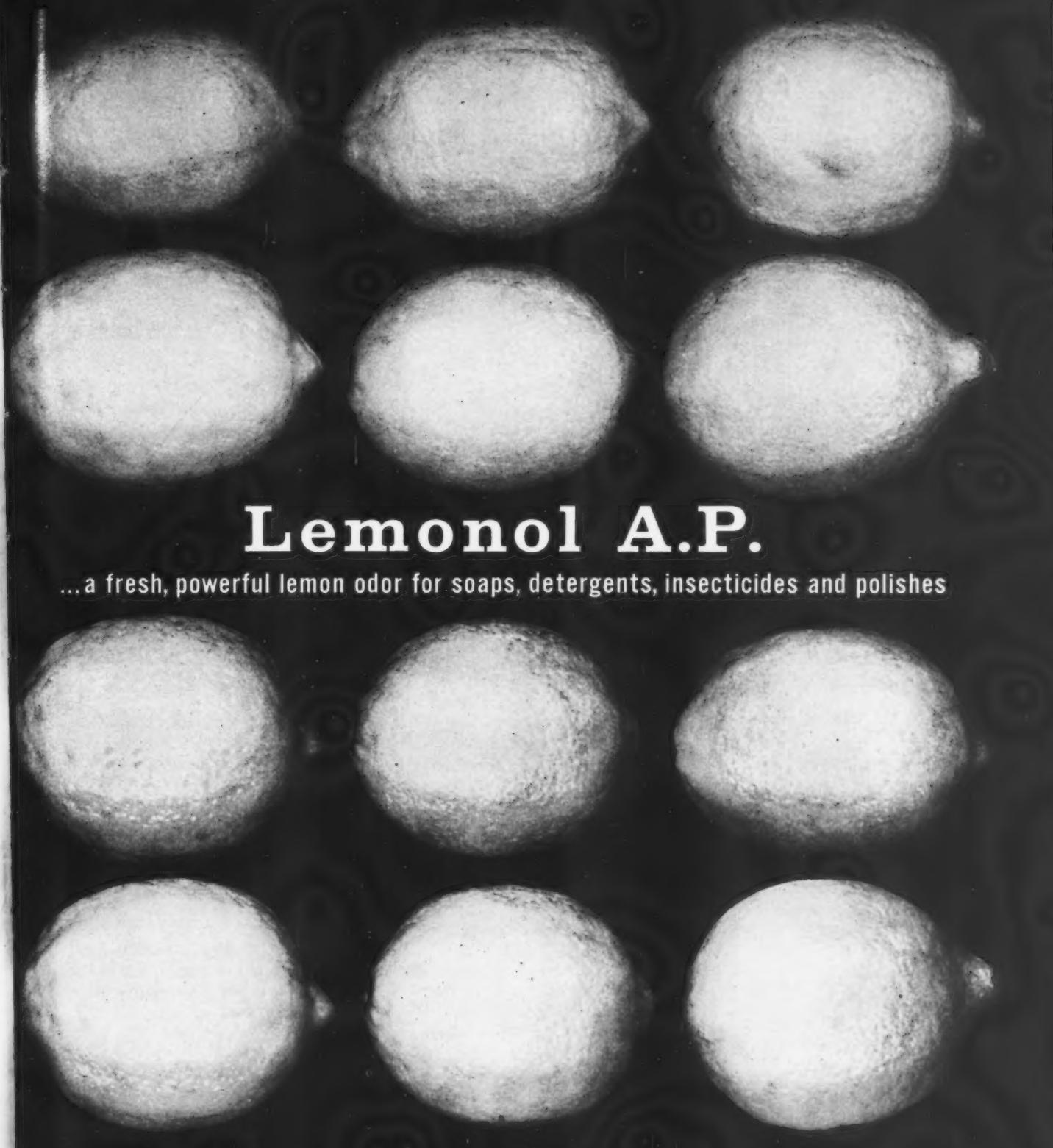

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Although a "reasonable polish business" for new automotive finishes is foreseen by the author, he questions the value of wax in such polishes because commonly used materials "have a very short life in sunny weather."
Photo courtesy Westley Industries, Inc., Cleveland

Modern Automotive Specialties

By Wardley D. McMaster,*
General Motors Corp.,
Warren, Mich.

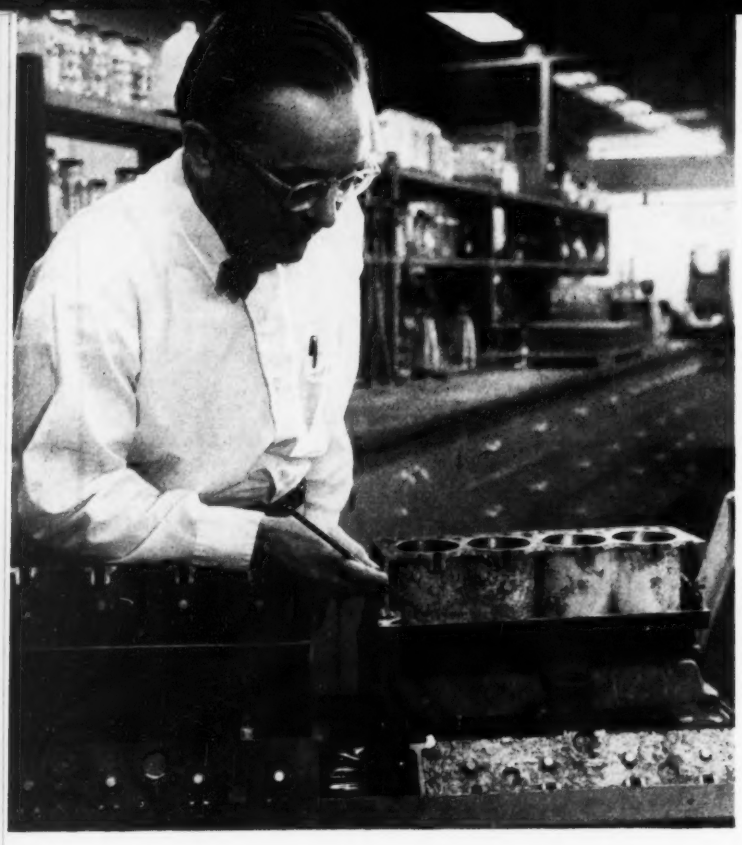
MANUFACTURERS of automotive chemical specialties have been particularly fortunate in that they have not had to make annual changes in their product in the same manner as have the suppliers of parts and accessories. Many of the changes that have been made in chemical specialties were relatively unheralded, so that there was no sudden change in the demand.

The introduction of phosphate treatment of sheet metal in the midle 1930's was quite gradual, and it was not until later that any mention was made of this in our advertising. Lacquer finish, while most revolutionary, came just before the major growth period of the industry, and was adopted so quickly by all major makes that we do not remember much talk about it. In spite of great advantages, lacquer finish had sufficient inherent weakness to prove a boon to the polish industry. The acrylics and super enamels, which represent the culmination of many years of search for a better finish, are capable of retaining their initial luster for several years with very little attention.

However, we believe that there is ample room for retaining a reasonable polish business in relation to the new finishes. Many automobiles live in such an environment that the old villain, traffic film, is a continuing threat to appearance, so that polishes may well compete with soap and water for a share in car grooming. However, the value of wax in such a polish is questionable, since the more commonly used materials have a very short life in sunny weather. They also tend to show water spots, and, if applied too

Need for new automotive specialties and new markets for existing products will result from changes in materials, design and performance of modern cars

*Paper presented at 47th annual meeting, Chemical Specialties Manufacturers Association, Hollywood, Fla., Dec. 7, 1960.



Cooling systems of these two foreign car engines were subjected to conditions that simulated 55,000 miles of driving. Du Pont's "Telar" anti-freeze and anti-rust coolant was used in the engine on left, and a nationally used "permanent" type glycol anti-freeze formula was used in the other. Serious corrosion occurred in the latter when formulation's inhibitor broke down from overuse.

heavily, may actually assume an alarming pock-mark appearance when the owner uses a high concentration of alcohol in his windshield washer.

Wind Shield Washers

This use of alcohol in the washer suggests another field for exploitation which, to my knowledge, has not been much advertised. We believe that the public has been irritated by using washers in freezing weather, and finding that there is a film of ice formed through which it is impossible to see the road. We are therefore recommending the use of 35 to 50 per cent solutions of isopropyl alcohol in the windshield washers.

There are some advocates of methyl alcohol and normal propyl alcohol for washer solutions. Methyl alcohol solution has the lowest freezing point for a given percentage of alcohol, yet this seems to be more than offset by its high volatility. On the other hand, normal propyl alcohol appears best from the standpoint of volatility, but can harm the finish if used in warm weather. We therefore favor the use of isopropyl alcohol instead. Unfortunately, salt is not very soluble in the 50 per cent alcohol solutions and is removed from the windshield only after considerable wiping.

A 50 per cent solution of isopropyl alcohol with normal additions of suitable foam suppressors, amine detergent, and a non-foaming surfactant which will not attack the finish, should find an increasing market in the half gallon size. This size will carry the average owner through the winter season, and can be sold at a lower price than an equal volume of concentrate. The larger package and lower price may have appeal. There should still be a good market for the two to six ounce packages of concentrate used to prevent damage to the washer jar through freezing.

One item that appeals increasingly is the treated dust cloth. This is most useful on the vinyl or painted horizontal surfaces of the instrument panel and rear shelf, as well as for the exterior on occasion. Public acceptance may be less than desired because some offerings have been too oily, leaving the hands in no condition for driving.

The increased use of plastics in the modern automobile has resulted in the deposition of plasticizer on the inside glass surfaces. This deposit is difficult to remove. Emulsions containing diatomaceous earth, which are allowed to dry on the glass and then wiped off, can be very successful in this cleaning operation, on both the inside and outside of the windshield.

Many owners drive under handicaps resulting from failure to lubricate the "stove" shaft. A suspension of graphite in liquid, sold in a can with a six-inch curved spout and screw cap, would be a welcome product, but would require advertising, as most owners and service stations ignore this area completely.

Upholstery Cleaners

An increasing concern for safety has made some changes in upholstery cleaners desirable, both from the standpoint of fire hazard and toxicity. So far has this gone, that in our own laboratory the chemical stockroom does not supply carbon tetrachloride without the approval of the safety department, and automatically advises this department of any unusual withdrawals of benzene. These worthy solvents are being replaced by 1.1.1-tri-chloro-ethane, (methyl chloroform). Perhaps this material should be made available to the general public, for use as a non-flammable, and relatively nontoxic solvent, in place of the naphtha usually sold.

In this area of upholstery cleaners, we find the foaming surfactants to be quite acceptable, and definitely preferable to any solvent for use in the relatively closed interior of an automobile. The effect of cleaners on foam cushions must be taken into consideration.

We have noted and tested several lines of products suited to

the needs of those who wish to restore the interiors of cars that are more than three years old. It would seem a good idea to push these materials rather than to let owners of such older vehicles cover up the dirt and discoloration with fabrics which frequently have a makeshift appearance.

Tar removers seemed to be in great demand 20 years ago but perhaps should be losing ground with the appreciable upgrading of our major road surfaces. The advent of the acrylic finishes has made it necessary to limit the tar solvents to a maximum of 60 per cent of cyclic hydrocarbon with complete elimination of that most active material, orthodichlorobenzene.

Coolants and Inhibitors

Looking toward the future, we believe that major activity may be expected in the field of coolants and corrosion inhibiting media of all kinds.

It is now generally recognized that aluminum engines are on the way. These may be more expensive to make, yet offer advantages that we cannot afford to overlook. There is a real need for advanced production techniques at the present time, and as these become increasingly available, an aluminum engine may be more economical than the cast iron ones. The very considerable saving in weight, and the heat transfer characteristics of aluminum may be two worthwhile bonuses. Mr. Rowe has discussed some aspects of the aluminum problem with you. Since that time we have been reassured by the evident ability of your industry to inhibit ethylene glycol so that aluminum will not be attacked in a properly designed system.

We have recognized two problems related to specification and procurement, of which we were unaware three years ago. First, a tendency of some inhibitor formulations to promote the development of a protective film on the surface of aluminum was first noted late in 1959. Studies instituted at that time indicated that the film was removed in the normal cleaning process and was reported erroneously as corrosion loss. Sufficient time has not elapsed to permit a decision as to whether or not such a film is likely to be superior over a long period of use, in the presence of the chemicals that produced it, to another inhibitor system without a film, but with equally good results in the glassware test.

Second, the General Motors Specification 1899M has been used to eliminate a number of products known to be fully satisfactory, because it did not take into account the formation of a protective film. Our corrosion limits are low, though completely reasonable. We suggested that a very minor deviation should be acceptable and that there certainly was room for some exercise of judgment, in view of the very considerable upgrading which the specification accomplished for us.

Both of these problems have been taken into acount in a revision of the specification wherein we make provision for consideration of the film forming inhibitors by setting special limits.

We have also sought to resist the temptation to overemphasize the corrosion limits by stating that the antifreeze should give one year of practically corrosion free service, and that its capability in this regard is indicated by conformance with said corrosion limits. We have also advocated the use of the anti-freeze solution as the coolant all the year around where possible. Some of our divisions are reluctant to recommend this to owners because of an adverse effect on cooling in hot weather and continue to recommend a spring dumping of antifreeze and replacement with water, for the present.

Owners who do not experience overheating in hot weather with premium gasoline will be well advised to keep their antifreeze in all summer, rather than dumping it and replacing it with questionable water, as so many do.

There thus remains a wide field for the sale of inhibitor additives for water coolant. At this writing we have been made aware of only one fully satisfactory inhibitor for water solutions, and this is actually sold as a radiator flush! A number of products have been selected for evaluation. We do not propose to market such an item ourselves but hope to find a number of acceptable products to recommend for service use. It is generally recognized that it is somewhat more difficult to inhibit

Newest automotive chemical specialty: "Prestone"' ice melter in pressure package for windshield and car windows. Product by Union Carbide came to market first late last year.

water against corrosion than a glycol mixture. This also seems true of alcohol mixtures.

We have long held the position that cooling systems, properly equipped at the factory and maintained according to GM1899M, should never require cleaning or flushing, and should not be subject to overheating. In order to insure proper operation of a power plant, we believe that a thorough fall checkup is desirable. In spite of our position on cleaning, we prefer not to exempt the cooling system from this check, notwithstanding the possibly greater life expectancy of the coolant. Hence our proposed annual drain and refill each fall.

Whether or not one retains his coolant for the full 12 months, and particularly if he does not, water quality becomes rather important in the light of our goal. We are therefore issuing a water specification which will include all waters in four grades: rural rain water; distilled or deionized water; Great Lakes water or its approximate equivalent; water such as proposed for ASTM D1384 plus hardness factors and a total solids limit; and water exceeding that proposed for D1384 in any of its values. We shall indicate that commercial inhibitors will handle the first three classes for 12 months, and recommend that waters of the fourth class be not used. We suggest that wherever special filters or water softeners are required in the home, the water may not be suitable for use in the cooling system. We wish to avoid not only corrosive content, but scale forming or sediment forming content.

Automotive chemical specialties being tested at new Tarrytown, N. Y., research laboratory of Carbide and Carbon Chemicals Co., New York.

Thus far, we have been concerned only with cast iron and all aluminum engines. However, there is a further goal that must not be overlooked—magnesium engines and components. The use of magnesium affords additional saving and certain machining advantages over aluminum. The problem of inhibition against coolant corrosion has not been extensively studied as yet, and is suggested as worthy of consideration.

In the realm of protecting decorative plating from corrosion, we appear to be slowly working out of major corrosion failure. It is probable that, for a number of years to come, there may be room for products that may be applied to plated parts without unduly affecting the appearance. There have been quite a few satisfactory inhibitors in the past, but none but the clear acrylic met with public acceptance, either because of the appearance created, or because of difficulty in removal. One or more new materials have appeared this season, but may find the public somewhat wary as a result of past experience.

It is quite likely that two and three year old cars will need some inhibiting treatment for plated parts as long as such are used. To be acceptable, the treatment should be more than a simple paint film.

Corrosion in general is attracting greater interest due to the increasing amount of financial investment involved in the ownership of a motor car. We have initiated a program of study which is calculated to focus attention on failures related to design.

Sweden has recently adopted a street salting program that has resulted in such wide spread corrosion as to cause considerable alarm. Acceptable means of combating this situation are being sought.

If any major area has been overlooked in our review of chemical specialties for the modern automobile, it may be because the author is hard to sell, or has not been reached by the advertising.■

—★—

NPCA Sponsors Research

Cockroach control is a high priority subject sponsored by the National Pest Control Association's research fund. Contributions to the fund totalled $8,706.35 in 1960, first year of its existence.

At Oklahoma State University, NPCA's fund supports the work of Richard Price, a former pest control operator. Under the guidance of D. E. Howell, Mr. Price investigates the use of repellents in cockroach control and screens materials of potential promise in this application. Preliminary results are said to indicate that repellents have "much potential use in roach control."

The increasing problem of resistance in German cockroaches is being investigated by J. McD. Grayson at Virginia Polytechnic Institute. The NPCA fund is supplementing the appropriation for Dr. Grayson's work. He is currently preparing to test potentially useful insecticides against German roaches resistant to two groups of chlorinated hydrocarbons, to organic phosphates, and to pyrethrins.

Termite bio-assay studies are being sponsored at the University of Georgia. Additional research projects are under consideration. At present, the association is attempting to arrange a study on the importance of individual components in a formulated spray to the insect control properties of the finished product.

Contributors to the fund in 1960 included 270 active NPCA members, 13 allied members, and seven local associations and friends.

Face Fly Laboratory Rearing

First successful rearing in the laboratory of Musca autumnalis, a serious pest of livestock is major step forward in developing controls

By J. H. Fales, O. F. Bodenstein, and J. C. Keller,
Entomology Research Division,
Agricultural Research Service,
U. S. Department of Agriculture, Beltsville, Md.

SINCE 1957 in the United States and Canada, the face fly (*Musca autumnalis* DeGeer) has become a serious pest of livestock, especially dairy and beef cattle. Several workers have studied this insect in the field—Hammer (1942) in Europe and Teskey (1960) and others in America. Sabrosky (1959) has given the characteristics for distinguishing this insect from its generic relative, the house fly. Experiments on chemical control have been performed in the United States by Anthony *et al.* (1961), Bruce *et al.* (1960), Granett and Hansens (unpublished data), Ode and Matthysee (unpublished data), and Treece (unpublished data).

Most workers have reported that control of the face fly on cattle was difficult, although Bruce (1960) stated that high reductions occurred when poisoned baits were applied to the animals. The need for establishing laboratory colonies of this insect has been generally recognized. Thus, new information on their biology could be obtained as well as larvae or adults for insecticide or other laboratory tests.

Survival of adults in the laboratory: Although adults fed on skim milk, it did not keep them alive for more than a week. Additional foods, described later, were supplied. These foods increased longevity of caged face flies up to 63 days.

Cages for rearing: Hammer (1942) reported that face flies mated on the wing. Accordingly, large-sized cages were thought to be necessary for mating in the laboratory. This supposition was found to be incorrect, since mating apparently did not take place as effectively in cages up to 54 cubic feet in volume in a greenhouse as in the laboratory rearing room in cubical wooden and wire cages, 10 inches on a side, with a glass front and rubber back (fig. 1). This type of cage was used throughout these experiments to hold flies in the pupal stage that emerged to adults and later mated and oviposited.

Rearing room: The rearing room (fig. 2), located in the basement of a brick building, is rectangular with a volume of 1100 cubic feet. A window in one end has a western exposure. The walls, painted a light color, are lined with shelves. The temperature is maintained at 80° F. and the relative humidity at 50 to 55%. Since the F_1 generation, an artificial light source 24 hours a day has been from a single 200-watt incandescent lamp, two 275-watt Westinghouse RS[2] sun lamps, and more recently two 400-watt General Electric F96 PG17CW[2] fluorescent lamps (fig. 2) that give a light intensity about 20% that of sunlight. After the GE lamps were installed in late December 1960, the incandescent lamp was eliminated.

Adult diet: An attempt has been made to duplicate the food elements that might generally be available to adult face flies in nature. Sponge cups, filled at an even level with fresh cow manure (about 175 grams) collected in the morning at a dairy barn, were placed in each cage to serve as food and as an oviposition medium. This manure is taken directly from yearling Holstein cattle used in feed-efficiency and growth-rate studies by the Animal Husbandry Research Division at Beltsville, Md. Each animal consumes between 18 and 25 lbs. per day of U. S. No. 1 alfalfa hay (17% crude protein on a dry-matter basis) and three lbs. of grain (10% crude protein on a dry-matter basis). About two grams of ground, raw stew beef on a small square of cardboard is placed on the bottom of each cage. About 45 ml. of a skimmed-milk and granulated-sugar solution at the ratio of 2:1 V/V is provided in a small Stender dish (60 mm. wide and 28 mm. deep) or other suitable container. A sliver of styrofoam floats on the surface of the solution and serves as a resting place for feeding.

About 0.35 gram of a "Diamalt"[2] solution containing mucoproteins from animal intestines, brain-heart infusion, and pollen is also placed in the cages on inverted tops of Stender dishes, 60 mm. in diameter. This solution is

[2]Mention of these proprietary products or companies does not imply endorsement by the U. S. Department of Agriculture.

made periodically as follows: To 50 ml. of "Diamalt" is added 2.5 ml. of a 5% W/V water solution of dried mucous membrane of animal intestines (Armour and Co. "ARD 444");[2] 2.5 ml. of a 7.50% W/V water solution of brain-heart infusion (Baltimore Biological Laboratory Lot No. 8542);[2] 2.5 ml. of a filtrate of a water solution containing equal parts of mustard and hedge pollen. This last solution is made by soaking a mixture of 18.5 grams of each pollen in a total volume of pollen and warm water to equal 200 ml. After two hours this solution is filtered through two layers of cheesecloth.

Multiple vitamins, "Wesson"[2] salts, yeast, honey, lanolin, and egg white were also supplied but were discontinued after the first generation in favor of the above diet.

In June 1960 the face fly became a serious pest of livestock for the first time in central Maryland. This occurrence prompted workers at the laboratories of the U. S. Department of Agriculture at Beltsville, Md., to investigate this insect in the field, to perform control tests (Fales *et al.*, unpublished report), and to attempt laboratory rearing. This paper reports the successful and complete laboratory rearing of the face fly from August 1960 to March 1961. Specimens from the parent generation were identified as *M. autumnalis* by C. W. Sabrosky of this Division.

Establishing the parent colony: In late April 1960 a first attempt to rear the face fly by the same techniques as for the house fly was not successful with adults collected by A. W. Lindquist and G. W. Eddy in Berkeley County, West Va. In June, July, and August adult face flies were netted in Maryland about the heads of dairy cattle in pasture or from fences near pastures or barns. Adults were also obtained from larvae or pupae in or near manure in the field. The parent generation thus obtained contained about 1500 adults.

Method of handling: The cages of adult face flies are supplied daily except Sunday with the foods outlined above. Mating takes place within several days and fertile eggs are usually deposited under the surface of fresh manure by the sixth day. The eggs hatch in about half a day and the maggots grow rapidly. Each day the dishes of manure are removed and placed in another cage. On the third day the manure in these dishes is carefully torn apart with forceps. If maggots are present, the manure is removed and put into a crystallizing dish, 15 mm. in diameter, the bottom of which is partly covered with a light layer of fine sand. This environment provides a place for the maggots to pupate, which usually occurs by the fourth day. If too many maggots are present for the amount of manure, fresh manure is added. The maggots readily enter the fresh manure. The dishes are covered with cheesecloth and placed on shelves in the rearing room (fig. 3). By the end of four or five more days the pupae are removed from the dishes and placed in shell vials stoppered with cotton plugs. The cotton plugs are removed before the adults emerge from the pupae. The vials are placed in the cages for adult emergence, which takes place about the eighth day after pupation. The vials are often placed in an upright position in an open half-pint ice-cream carton to keep them from rolling around when the cages are handled. As soon as adults begin to emerge the adult diet is supplied, including the manure.

With the method described

[2]Mention of these proprietary products or companies does not imply endorsement by the U. S. Department of Agriculture.

Figure 1.—(below) Ten inch cubical fly rearing cages

Figure 2.—View of room used for rearing face flies, showing equipment used in rearing face flies.

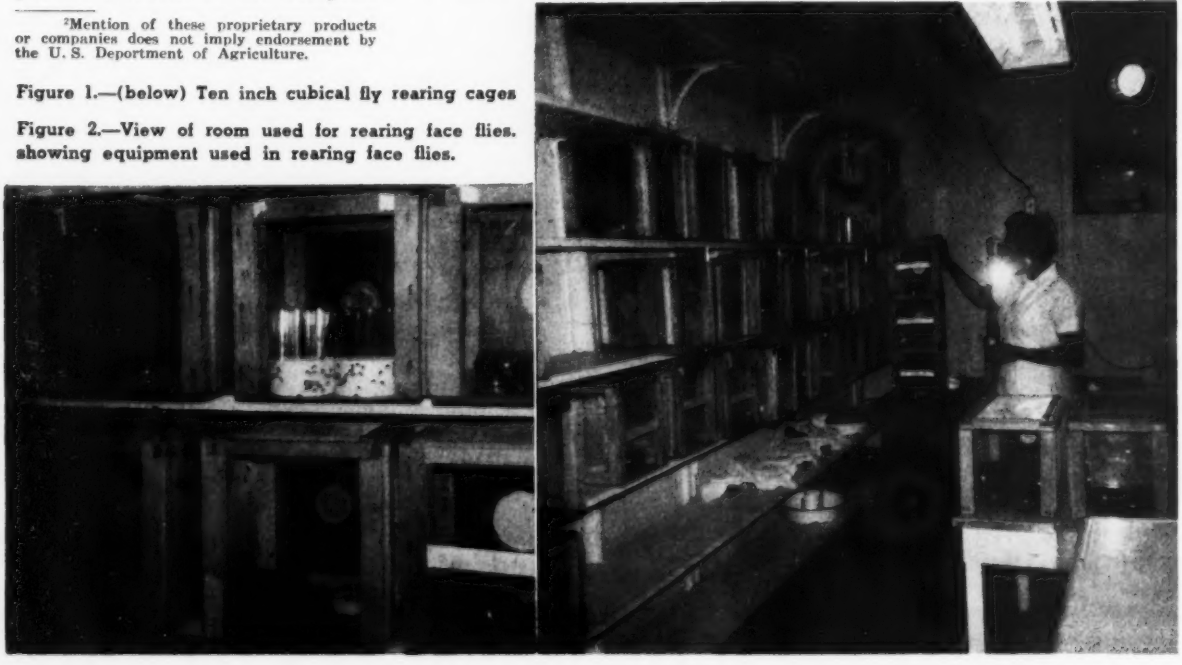


Figure 3. — Crystallizing dishes in which face fly maggots pupate.

the face fly has been maintained indoors through successive generations. The technique used has been essentially the same from the start. At least 23 different lots of parent face flies were studied between June 6 and September 6, at which time the F_1 generation was firmly established. The parent generation of about 1500 field collected flies was probably strong enough. However, succeeding generations were alarmingly low in numbers. Their initial abundance was attributed to the fact that the cages containing the parent generation were placed outdoors in the sunlight, where the flies were observed to oviposit almost immediately. In addition, the parent insects had already received their natural diet in the field. Only the first lot of F_1 flies was given sunlight to stimulate oviposition, which is possibly why the F_2 generation was even higher in numbers than the F_3. From this time on the culture was maintained entirely under artificial light. With diligent daily attention the culture increased in numbers until more than 3000 + individuals were obtained in the eighth generation. By the first of March, 1961 the culture was well into the ninth generation. At present the expectation is that the culture will continue to increase. The total numbers of individuals reared per generation are tabulated below:

Generation	*Total face flies reared*
1	1737
2	747
3	353
4	579
5	844
6	1217
7	1818
8	3135+

A high level of illumination is necessary for rearing the face fly indoors. Fresh manure is apparently needed as an adult food as well as an oviposition medium. The maggots will mature in the typical house fly rearing medium; however, since fresh cow manure is needed for oviposition and the duration of the larval stage is short, transfer of larvae to this medium is an unnecessary step. Certain other constituents also appear to be necessary in the adult diet, but these have not yet been determined. Optimum diet and light requirements are being ascertained. As time permits, an effort will be made to work out an oviposition medium other than fresh manure. The present method should not be considered final. Undoubtedly, improvements will be made that will both simplify the procedure and bring about an increased production. The results of these later studies, as well as information on the biology of the face fly, will be made available in a subsequent publication.■

Acknowledgement

Acknowledgement is made to R. P. Hall for her diligent efforts in rearing and handling the flies and to L. H. Wessel and J. R. McCoy for their assistance.

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—— ★ ——

USDA Face Fly Study

Year-round research to find ways of controlling the face fly, has been made possible by development of a laboratory method of rearing these flies, the U. S. Department of Agriculture reported recently. USDA's agricultural research service has succeeded in propagating the insects through eight generations in an effort to build a colony large enough to permit experiments aimed at development of suitable control measures.

The face fly, which looks like a house fly, was first found in the United States (New York State) in 1953. When present in large numbers, this livestock pest reduces milk production in dairy cattle and holds down weight in meat animals.

Keys to laboratory propagation of this insect, the entomologists found, are proper diet and light.

The face fly now occurs in nearly all states east of the Mississippi River and in Iowa, Kansas, Minnesota, Missouri, Nebraska, and North Dakota.

New Type Aerosol Lubricant

New automotive and household lubricant in pressure package, based on telomer of tetrafluoroethylene is dry, non-oily and stainless

By W. A. Hall*,
Marshall Laboratory,
E. I. du Pont de Nemours & Co.
Philadelphia, Pa.

A NEW entrant has appeared in the rapidly growing aerosol field. This is a new lubricant being marketed as an automotive and household chemical specialty. Its properties are interesting and its advantages numerous.

The propellant is a blend of "Freon"** #11 and #12. The active ingredient is a telomer of tetrafluoroethylene. This is a dry, non-oily, non-staining, white solid of waxy character. Because it is highly fluorinated, it has these outstanding properties: Lubricity; thermal stability; chemical stability; non-flammability; insolubility; non-oiliness; "anti-stick."

*Paper presented at 47th annual meeting, Chemical Specialties Manufacturers Association, Hollywood, Fla., Dec. 7, 1960.

**Registered trademark of E. I. du Pont de Nemours & Co.

The following data are characteristic of the solid ingredient:

Appearance	White waxy solid
Melting Range (closed tube)	265°-290°C. (509-554°F)
Particle size	1 micron
Density 25°C.	2.04
Solubility	Essentially insoluble in common solvents and water
Mol. wt. range	2000-3000

The product is now being marketed in the Du Pont specialties line as "Slipspray" aerosol dry lubricant.

A very slick film develops when this product is applied to most surfaces, including metals, wood, paper, plastic, glass etc. Excellent lubrication is provided between both like and unlike surfaces. Stick-slip problems are reduced by its unusually low static frictional characteristics. (Stick-slip is defined in practical terms as a high ratio of static to dynamic coefficients of friction).

Coefficients of friction have been determined on a modified "Instron" tester to compare the fluorocarbon solid with several common lubricants. (Coefficient of friction is defined in practical terms as the ratio of the force required to make an object slide to its weight). The data are shown in Table I.

A silicone preparation used

(*Turn to Page* 105)

Wide range of applications for "Slipspray" aerosol lubricant of E. I. du Pont de Nemours & Co., Wilmington, Del., are illustrated in photos below. Zippers, folding doors and stuck drawers can be lubricated without mess by this new dry lubricant which forms slick film on any type of surface and does not run, stain or collect dust, maker says. "Slipspray" dries quickly after application, remains dry, clean, and colorless; and is not affected by water, light, oil or solvents; won't freeze nor melt.

Eastman now offers polish formulators 7 basic types of polyethylene

New Epolene resins enable you to formulate broader range of liquid and paste polishes

The wide range of physical properties now available in Eastman's Epolene series of low-molecular-weight polyethylene resins provides formulating flexibility never before possible. For with the addition of three new resins (Epolene LVE, HDE and HD), polish makers can choose now from among seven different types to improve existing formulations or to develop new products.

Epolene resins produce self-polishing floor polishes that exhibit high gloss, anti-slip, water-spotting resistance and rebuffability. Emulsions of up to 40% solids can be prepared. Properly formulated, polishes made from Epolene are low in color and do not darken or turn yellow. Neither do they build up color with repeated applications.

Choose from either emulsifiable or non-emulsifiable types to obtain the right formulating characteristics and performance properties for your equipment and service.

Epolene E *emulsifiable* • Epolene E produces water-emulsion floor polishes that exhibit an excellent balance of high gloss, hardness, durability and good resistance to water-spotting, scuff and dirt pick-up. Ideally suited for heavy traffic, polishes made from Epolene E exhibit extreme toughness due to its higher molecular weight.

Epolene LVE *emulsifiable* • Lower in melt viscosity than the other emulsifiable Epolene resins, Epolene LVE has somewhat better handling characteristics and is the easiest to emulsify. It is softer than other resins in the series, too, and therefore may be expected to contribute better anti-slip properties and rebuffability to floor polishes made from it.

Epolene HDE *emulsifiable* • The first high-density emulsifiable polyethylene available, Epolene HDE is much harder than other resins in the series, yet quite easy to handle. A film of unmodified Epolene HDE emulsion is almost as hard as a film from a finished floor-wax formulation (rebuffable type). This increased hardness is due not only to the nature of this high-density polyethylene, but also to the fact that it is more compatible with oleic acid than are other emulsifiable polyethylenes. Epolene HDE restores rebuffability to polymer-containing polish formulations without sacrificing hardness.

Epolene N *non-emulsifiable* • Epolene N can improve significantly the properties of paraffin, microcrystalline or other waxes and is easily blended with these materials. It can replace part or all of the hard waxes in solvent paste polishes, for example, automotive polishes. Such polishes are characterized by low color, excellent hardness and gloss, and remarkable durability.

Epolene LV *non-emulsifiable* • Epolene LV and Epolene N are useful in similar applications. The LV type is softer than Epolene N, however, and because of its lower melt viscosity is somewhat easier to handle.

Epolene HD *non-emulsifiable* • An extremely hard material, Epolene HD is nevertheless easy to handle because of its low melt viscosity. It has a high softening point, and may be blended with waxes to increase their melting points. Epolene HD has a higher density than the other non-emulsifiable polyethylenes in the series.

Epolene C *non-emulsifiable* • Higher in molecular weight (7000) but lowest in density (0.907) of all the Epolene resins, Epolene C may be used in modifying waxes to increase melting points or to improve toughness and gloss.

Type	Molecular Weight	Brookfield Viscosity (cps. @ 120°C.)	Density	Penetration Hardness (100g./5sec./ 77°F., 10ths of mm.)
Epolene E	2500	1500	0.938	2
Epolene HDE	1500	455	0.956	1
Epolene LVE	1500	400	0.939	5
Epolene N	2500	2500	0.928	1
Epolene HD	1500	340	0.938	0.5
Epolene LV	1500	360	0.925	3
Epolene C	7000	16,000	0.907	7

If you are using low-molecular-weight polyethylenes in your polishes, investigate the complete Epolene series. Your Eastman representative will gladly explain the advantages of each of the resins in the series and will show you how to realize the most profitable use of them in your formulations. Ask him for specific formulating assistance and about the new time-saving, cost-cutting emulsifying technique developed at our laboratories.

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By Arnold Mallis

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Polymers in Emulsification

Synthetic or natural polymers at low concentrations can provide emulsion stability. Efficiency directly related to polymers' ability to develop significant yield value in the continuous water phase of o/w emulsions

By James S. Wolff and R. J. Meyer*,
B. F. Goodrich Chemical Co.
Cleveland, O.

ALL emulsions consist of a suspension of discrete spheres of a liquid in an immiscible liquid and are subject to generalized deterioration as a result of gravity. Instability occurs as a progressive phase separation of the liquids or, occasionally, as complete instantaneous destruction by a spectacular inversion of the two phases. By addition of the correct amount of surface active agent and using polymers to thicken the continuous liquid phase, a practical service life can be developed in most commercial emulsions, but normally with some sacrifice in properties.

Synthetic or natural polymers have the unusual ability of providing emulsion stability at low polymer concentrations. This efficiency is directly related to the ability of polymers to develop a significant yield value in the continuous water phase of oil-in-water emulsions. Examples of use of these polymers for stabilization of emulsions based on surface active agents will be complemented by examples using these polymers themselves as primary emulsifiers.

Emulsion Instability Factor

Emulsions will normally remain stable as long as droplets of the internal phase do not coalesce. Prevention of coalescence implies isolation of individual spheres of oil under conditions favoring permanent suspension. Commercial emulsions are normally complex formulations containing many ingredients and prepared under such a variety of processing conditions that many factors determine ultimate stability of the system. Table I details some of these factors and their effect on emulsion stability.

A cursory examination of Table I indicates that control of emulsion stability could be a simple technical problem since so many factors, and thereby opportunities for control, exist in the average emulsion. It is surprising that these variables have an unfortunate tendency to occur repeatedly in a manner favoring emulsion instability. In practice we find the breadth of compounding freedom severely limited by the large group of what we have termed "uncontrollable factors." Invariably the highest per cent solids obtainable is desired. Density differences between phases and cohesiveness of the internal phase are rarely favorable.

Detailed examination of the so-called "controllable factors" reveals them to be so inter-related as to be dependent rather than independent variables. For example, the droplet size and size distribution are a function of processing equipment used and the interfacial tension developed by surface active additives, as well as the viscosity of the continuous phase. As phrased by W. C. Griffin, "Indeed, our present state of knowledge frequently expresses itself in the statement that the more complex the emulsifier, the better it is." (1)

As a result, emulsions have been developed by trial and error in an artful attempt to balance these factors. As skills in balancing and counterbalancing additives

Table 1. Factors Controlling Emulsion Stability

Factor	Influence on Stability
I. Uncontrollable Factors	
Density difference betwen phases	Minimum difference favorable
Cohesion of internal phase	Minimum cohesive nature favorable
Per cent solids of emulsion	Low per cent internal phase favorable
Extremes of temperature exposure	High or low temperature exposure unfavorable
II. Controllable Factors	
Droplet size of internal phase	Smallest size favorable
Viscosity of continuous phase	Uniform size favorable
Charge on dispersed phase	High viscosity favorable
Droplet size distribution of internal phase	Uniform similar charge favorable
Interfacial tension between phases	Lowest value favorable

*Paper presented Dec. 6, 1960 during 47th annual meeting, Chemical Specialties Manufacturers Assn., Hollywood, Fla.

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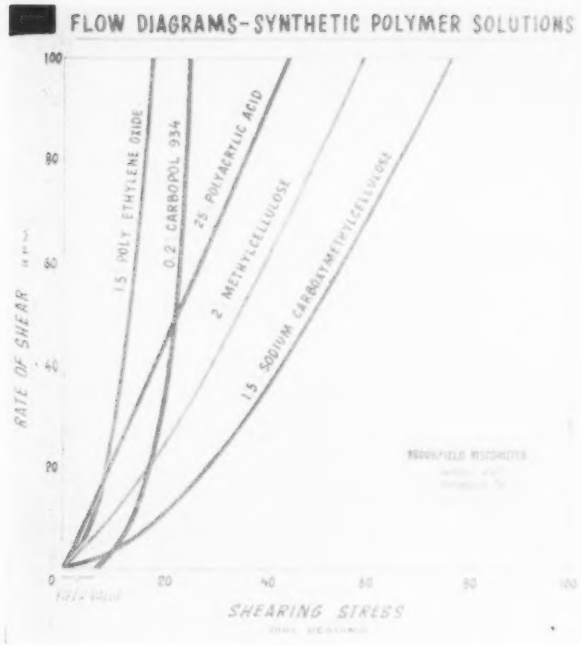

Figure 1.

Figure 2.

grew more proficient, the basis for simple formulation was buried under the habitual use of excessive amounts and types of additives with their undesirable side effects on the finished emulsion. In very few cases do these additives provide any functional benefit other than providing stability to an emulsion. Their concentration should be kept, therefore, at an absolute minimum.

Returning to our original premise that stabilization involves only a prevention of coalescence of individual spheres of internal oil phase, we find that isolation of spheres by any method that provides a "permanent suspension" will provide stable emulsions per se, independent of all other factors. Under these ideal conditions even the most cohesive internal phase, such as tar or the most crudely processed emulsions with random distribution of droplet sizes, could not coalesce. Most practical mechanism for isolation of dispersed spheres of the internal phase involves control of the rheology of the continuous water phase. Any increase in the apparent viscosity of this continuous phase results in retardation of phase separation. Many commercial emulsions can be stabilized to a practical degree by the addition of conventional thickening agents. In other emulsions excessive viscosity or undesirable side effects preclude use of this mechanism. In a study of the suspension of solids by natural and synthetic polymers (2), permanent suspension was shown to result when the water phase exhibits a critical minimum yield value irrespective of apparent viscosity. How can this mechanism be applied to the emulsion stabilization problem?

Rheological Evaluation

A detailed evaluation of the static rheological system can conveniently be determined by use of the Brookfield Viscometer. In addition, detailed methods of relative yield value analysis have been developed in our laboratory with this instrument. (3)

The Brookfield Viscometer is a rotational instrument which measures the shearing stress of a sample as a torque (Dial Reading) at any of a number of constant spindle speeds (r.p.m.) selected to provide a range of shear rates. Characteristic curves for a sample are obtained by plotting the rate of shear (spindle r.p.m.) vs. shearing stress (Dial Reading). Figure 1 is a representation of characteristic types of flow found in synthetic and natural polymer "solutions."

A Newtonian liquid is characterized by flow that is directly proportional to shearing force and is depicted as a straight line through the origin. This property is rare in hydrophilic polymer "solutions" since it is usually characteristic of very low molecular weight polymers.

Almost all hydrophilic polymer "solutions" are characterized by a pseudo-plastic flow curve. These materials flow more readily as rate of shear is increased to give a curve convex to the shearing stress axis and which goes through the origin.

By contrast, materials exhibiting plastic flow patterns will flow only after applied shearing stress is designated as yield value and can be measured as the intercept on the stress axis. (3)

In Figure 1 apparent viscosity values can be calculated at any range of shear as being proportional to the slope of the flow

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Table 2. Apparent 20 RPM Viscosity VS. Sand Suspension

Material	Brookfield V_{20}, cps	Sand Suspension
2.5% Locust bean gum	22,800	8 hours
3.0% Gum tragacanth (homogenized)	9,740	Permanent
2.5% Sodium alginate	8,360	2 hours
1.5% Guar gum	8,040	4 hours
0.25% "Carbopol 934"	6,350	Permanent
1.5% Sodium carboxymethylcellulose	5,900	3 hours
2.0% Methyl cellulose	3,200	1.5 hours
2.0% Gum tragacanth (homogenized)	2,560	8 hours
0.18% "Carbopol 934"	2,420	Permanent
1.5% Polyethylene oxide	2,040	3 hours
25.0% Polyacrylic acid	1,650	1 hour
0.15% "Carbopol 934"	1,600	48 hours
3.0% Gum tragacanth (low-shear prep.)	940	2 hours

curve in that area of shear. Further, the convex plastic flow curve indicates by its change in slope a rapidly increasing apparent viscosity as speed is decreased. Although absolute shear stress at 0 rpm cannot be measured, extrapolation of the curve to 0 rpm results in an estimated yield value which is acceptable for comparative purposes. This is approximated with the Brookfield RVT instrument by (3)

$$\text{Brookfield Yield Value} = \frac{(\text{Apparent Viscosity @ .5 RPM} - \text{Apparent Viscosity @ 1 RPM})}{100}$$

Solutions' Rheology

Typical flow diagrams for a series of synthetic polymer "solutions" obtained with a Brookfield RVT Viscometer are plotted in Figure 2. Most of these polymers exhibit a pseudoplastic type of flow behavior, as do those of natural polymers analyzed in Figure 3. These graphs reveal "Carbopol"** polymers are unusual in forming solutions with significant yield value. Thus, it is possible to characterize a polymer "solution" from the standpoint of yield value as well as viscosity. The usefulness of such a characterization becomes apparent when correlated with demonstrated suspension permanence.

Table 2 shows a complete lack of correlation between apparent viscosity of solutions and ability to suspend silica sand particles.

By contrast, correlating suspension permanence with yield value, as in Table 3, indicates that yield value is the dominant factor in producing permanent suspensions.

The most desirable polymers for promoting permanent suspensions are those that form "solutions" exhibiting significant yield value; that is, have plastic flow properties.

For specific sand grains a critical minimum Brookfield yield value exists between 90 and 124. (Table 3) All values above this produce permanent suspensions. A theoretical minimum Brookfield yield value can also be calculated from the physical characteristics of a spherical particle or droplet to be suspended by equation below.

Correlation of experimentally observed minimum Brookfield yield value with theoretical minimum yield value is adequate for most product development work. Highly efficient development of yield value at low "Carbopol" concentrations is shown in Figure 4. To facilitate reference to common products, minimum Brookfield yield value for golf balls, marbles, silica sand, and spherical droplets of mineral oil with a 50 micron diameter in water have been superimposed on this graph. Each of these spherical particles represents a grossly exaggerated situation with regard to specific gravity and sphere diameter of a normal emulsion.

Yield Value Application

Unlike gravity, yield value is non-directional. As a result, "Carbopol" polymers are as effective in preventing flotation of low-density oil phase droplets as in preventing settling of high-density solid particles. In fact, the usual emulsion system, with a relatively small difference in density between the dispersed and continuous phase and normally very small droplet size, eliminates the need for high minimum critical yield value for permanent suspension of these systems. Invariably these systems are

$$\text{Theoretical Minimum Yield Value} = \frac{(\text{Vol.} \times \text{Density Sphere}) - (\text{Vol.} \times \text{Density Displaced Media}) \times (\text{Acceleration Due to Gravity})}{\text{Cross Sectional Area of Particle}}$$

Table 3. Effect of Yield Value on Sand Suspension

Material	Brookfield Yield Value	Sand Suspension
0.15% "Carbopol 941"	500	Permanent
0.25% "Carbopol 934"	410	Permanent
3.0% Gum tragacanth (homogenized)	276	Permanent
3.0% Gum tragacanth (aged 2 months)	144	Permanent
0.18% "Carbopol 934"	136	Permanent
0.10% "Carbopol 941"	124	Permanent
0.15% "Carbopol 834"	90	48 hours
2.5% Locust bean gum	80	8 hours
1.5% Polyethylene oxide	40	3 hours
1.5% Sodium carboxymethylcellulose	36	3 hours
1.5% Guar gum	32	4 hours
2.5% Sodium alginate	16	2 hours
3.0% Gum tragacanth (low shear make-up)	5	2 hours
2.0% Methyl cellulose	0	1.5 hours

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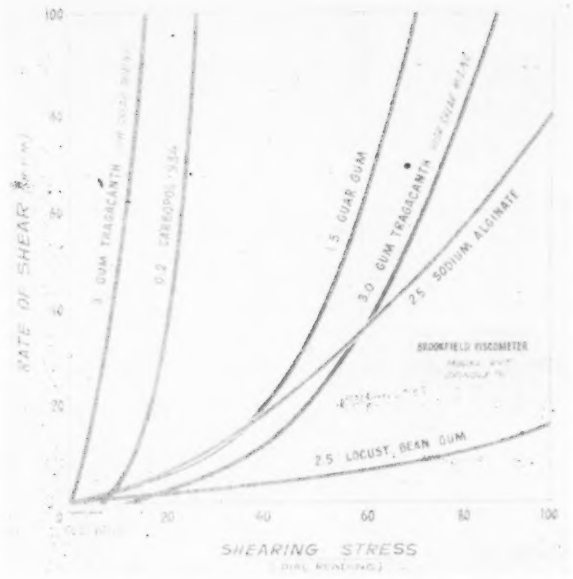


Figure 3. Flow diagrams—Natural polymer solutions

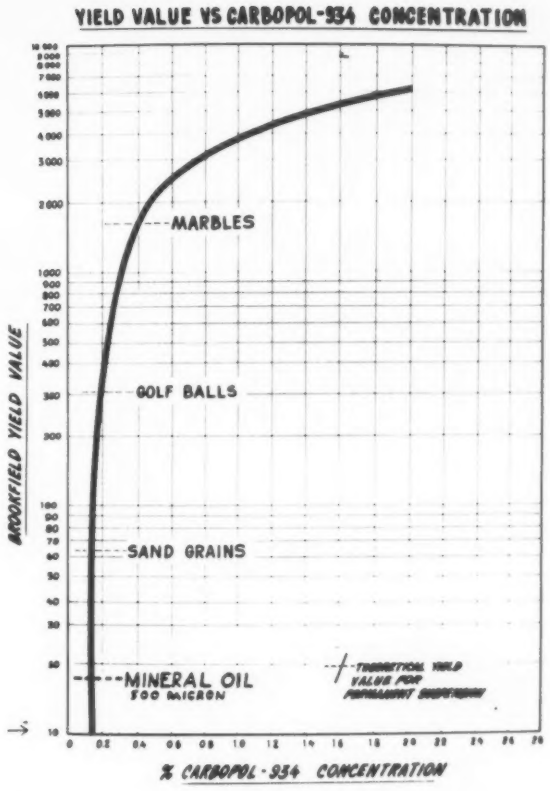


Figure 4. (right) →

adequately stabilized with Brookfield yield values of the continuous phase of less than 50.

Figure 5 demonstrates practical application of yield value to an emulsion. These two emulsions with identical apparent viscosities have been aged 15 days at 125°F. No separation took place in the formulation stabilized with a material having plastic flow (0.1% "Carbopol 934"), whereas a formulation stabilized with 0.3% of a material with pseudoplastic flow exhibited a phase separation of 29%.

Of equal importance to the development of yield value in water phase is maintenance of this rheology over extended aging and severe extremes of temperature. Stability of "Carbopol" polymers to extended aging, their lack of sensitivity to biological degradation, and uniformity of rheologi-

(*Turn to Page* 99)

Figure 5.

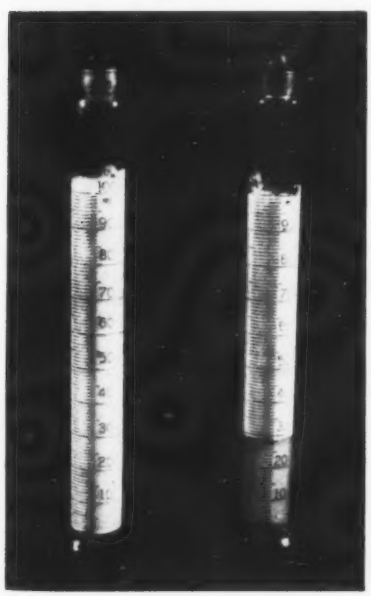
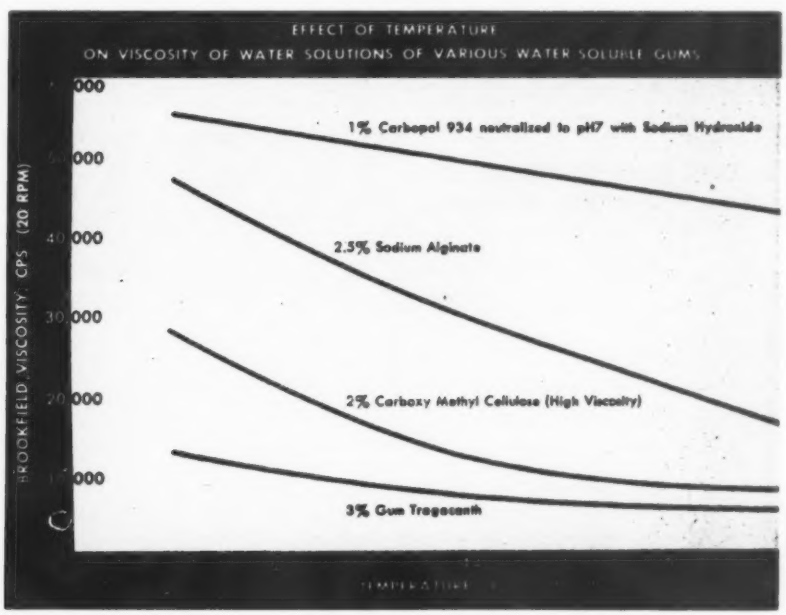


Figure 6.


EFFECT OF TEMPERATURE
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cal effects over a wide range of temperatures (Figure 6) all contribute to the value of these polymers in emulsion stabilization. Use of "Carbopol" polymers in emulsification applications may be studied on the basis of a series of three arbitrary groupings based on the relationship of polymer additive to other emulsion ingredients.

Isolated Sphere System

The isolated sphere system should be considered in spite of limited commercial utility as it represents the pure application of yield value to permanent suspension of dispersed oil in a continuous water phase. Emulsions can be prepared throughout a pH range of from 3.0 to 13.0 by physical dispersion of an oil-in-water "solution" of sufficient "Carbopol" polymer to provide the necessary yield value for permanent suspension. The amount of polymer necessary is directly proportional to the degree of ionization or neutralization of the polymer. Thus, a 50 per cent mineral oil-in-water emulsion at pH=3.0 will require 0.5 per cent of acid "Carbopol 934" polymer for stability, whereas 0.1 per cent of "Carbopol 934" neutralized to pH=7.0 provides equivalent suspension. In these systems the polymer has no influence on surface tension of the water phase or interfacial tension of water/oil interface. Therefore, a physical expenditure of work must be applied by use of high-shear agitation or milling to effect a desired oil phase droplet size. Once dispersed, rheology of water phase prevents coalescence and phase separation with much greater tolerance to particle size distribution of the internal phase than normally experienced in emulsifier-based emulsions. A photomicrograph (Figure 7) of an emulsion, which has remained stable for over two years in our laboratory, characterized by a range of droplet diameters from one micron to 50 microns demonstrates the startling ability of yield value to prevent coalescence. In most commercial emulsions, nevertheless, it is an advantage to use surface active additives to reduce required energy input. In many applications, however, such as acid emulsions, in which cationic emulsifiers may be undesirable, or in systems requiring the ultimate in non-rewetting after deposition of the emulsion, use of the isolated sphere system may be found highly advantageous.

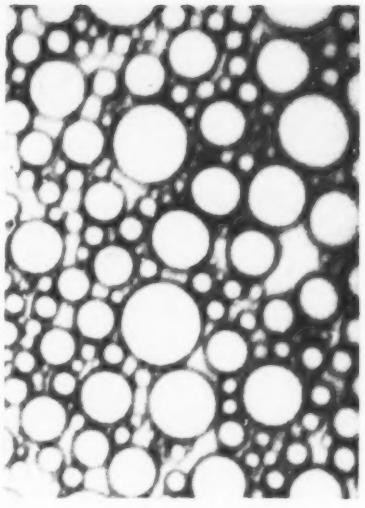

Figure 7.

(To be concluded)

Quaternaries

(From Page 62)

sion polymerization, acid cleaning, as highly specialized surfactants (emulsifiers, wetting and foaming agents, petroleum production additives), and even as corrosion inhibitors.

Effective use of an amphoteric depends on taking advantage of the specialized and polyfunctional properties inherent in the molecule. Amphoterics compete with conventional surfactants only in the broadest sense. It is more correct to say that they are adjuncts to conventional products or for use in tasks possible only because of the amphoteric structure. Amphoterics will perform in strong caustic or acid, are convertible from an anionic to a cationic by changing pH, are capable of removal by pH change or precipitation at their isoelectric range, have polyfunctionality (combining cationic and anionic characteristics), etc. As more becomes known about these unique products, their high degree of versatility cannot help but find application in many as yet unrealized uses.■

—★—

New Tick and Flea Control

Recent experiments by Dr. Byron Williamson of Agricultural Specialties Co., Dallas, indicate that "Sevin" insecticide gives effective control of fleas and ticks. He explored the resistant tick and flea problem in field trials and tests with cooperating veterinarians and results indicate a rapid kill of all immature stages of brown dog ticks and the adult male tick. Animals dusted with a five per cent "Sevin" formulation were protected against reinfestation for periods ranging from ten days to three weeks. In other cooperative tests with veterinarians, Dr. Williamson prepared a formulation of five per cent "Sevin" dust and five per cent chloranil, a fungicide to eliminate scratching. Results were stated to be uniformly good.

Dr. Williamson reports when "Sevin," a material produced by Union Carbide Chemicals Co., division of Union Carbide Corp., New York, was applied, no harmful effects were observed in either dogs or cats, and there was no weight loss associated with these applications.

—★—

FMC Donates College Grant

Food Machinery and Chemicals Corp., New York, recently made a $3,450 grant to the department of entomology, Kansas State University, Manhattan. The grant will be used to aid departmental studies in predicting how effective fumigant application will be in full-sized storage bins and elevators. The current project is part of the university's fumigant research program, involving studies of the fundamental factors which affect fumigation, and the development of new and improved fumigant formulations.

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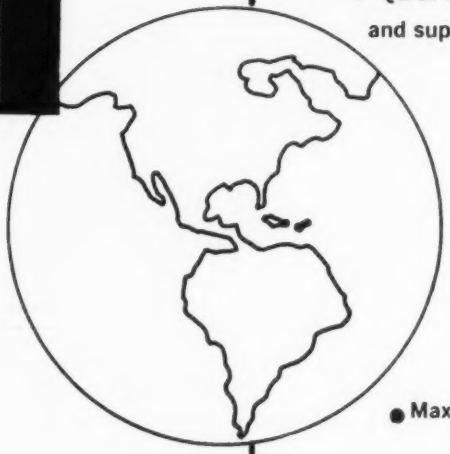

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OPERATOR		PLATE #1	PLATE #2	PLATE #3	PLATE #4
A	AVG	31.5	9.9	63.8	35.1
	σ	± .85	± .31	±1.32	±1.11
B	AVG	31.9	9.4	63.8	34.6
	σ	± .61	± .51	±1.02	±1.36

BASED ON 10 MEASUREMENTS OF EACH PLATE

PRECISION OF MEASUREMENTS BY TWO OPERATORS

Figure 9

Dishwashing Detergents

(From Page 54)

plates. A sample calculation is shown in Fig. 9 for the sake of clarity. Because glass plates completely free from surface defects cannot easily be obtained, a blank correction for the clean plate is used.

Normally, duplicate experiments are performed. The standard deviation for two determinations is approximately ±5 per cent. Therefore, if the values of two tests agree within 10 per cent, the average is accepted. If the agreement is not within 10 per cent, two additional replicate runs are made and the four-test average is used. Duplicate runs suffice in almost all cases within the acceptable range of deposition normally encountered in the home.

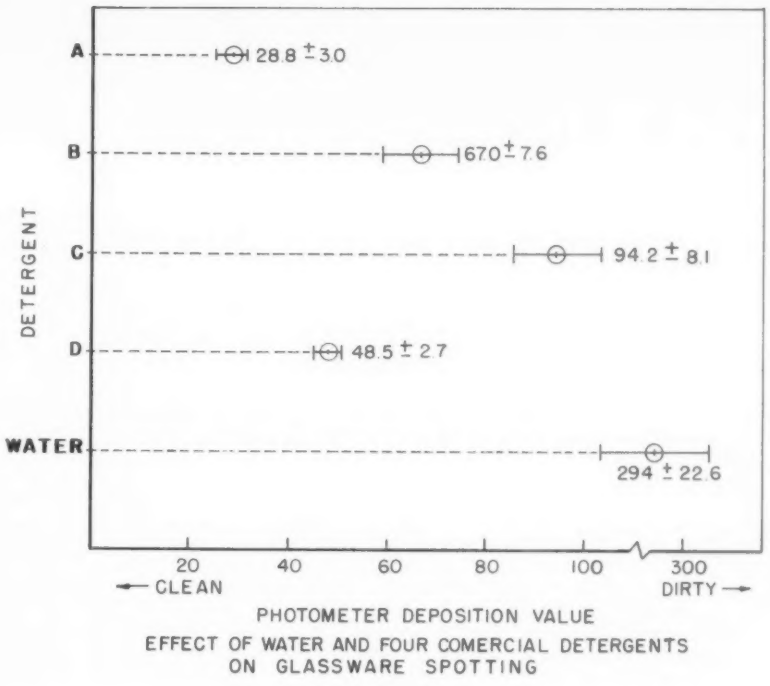
The practical significance of the method is best demonstrated by the sensitivity of the results to three factors frequently studied in dishwashing: Detergent type, machine design, and wash temperature.

First, the instrument and methods used are suitable for studying detergent action (Fig. 10).

Figure 11

	AVERAGE DEPOSITION VALUE (X)		
DISHWASHER TYPE	L	M	R
TEST RUN 1	27.3	61.3	47.2
TEST RUN 2	26.8	61.6	49.3
TEST RUN 3	32.3	68.6	53.6
TEST RUN 4	28.9	70.3	48.6
TOTAL	115.3	261.8	198.7
$\bar{x}$	28.8	65.4	49.7
σ	±1.5	±3.4	±1.7

INFLUENCE OF COMMERCIAL DISHWASHER DESIGN ON DEPOSITION



EFFECT OF WATER AND FOUR COMERCIAL DETERGENTS ON GLASSWARE SPOTTING

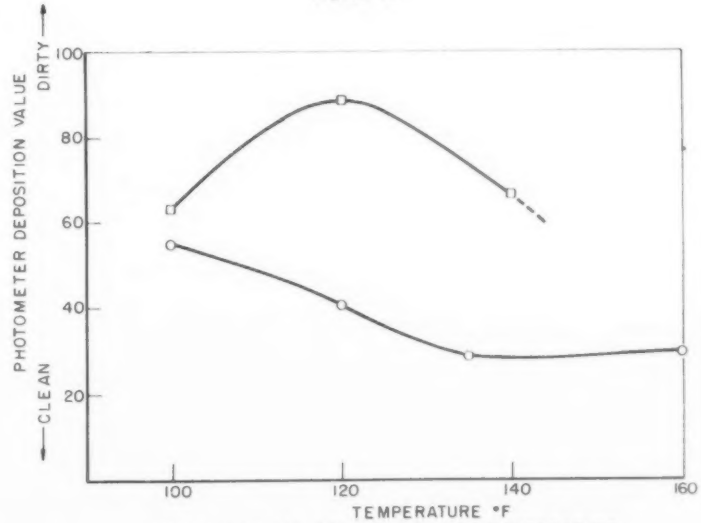
Figure 10

The 95 per cent confidence limits around the mean for duplicate runs with commercial detergents were approximately ±10 per cent of the average. This figure shows a comparison of the deposition tendency of five commercial dishwashing detergents and of water used without detergent. The effectiveness of the better detergents relative to water alone is readily evident.

Second, the filming and spotting characteristics of different machine designs may be studied by this procedure. The deposition values obtained for three different household dishwashers under identical test conditions are presented in Fig. 11. There is clearly a significant difference between the models tested.

Third, the effect of temperature on deposition can be deter-

Figure 12



VARIATION OF DEPOSITION WITH TEMPERATURE FOR TWO DETERGENTS

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mined by the photometric method. Spotting and filming are generally less influenced by wash temperature than is soil removal. The temperature effect on two different types of detergents is illustrated in Fig. 12. Radically different detergent compositions show characteristically shaped deposition curves over the temperature range normally used.

Four of the photometers described have been constructed and are in use in three widely separated laboratories. To permit comparison of results obtained in the three laboratories, an interlaboratory correlation study was carried out. The same model dishwasher was used in each laboratory and identical procedures were followed throughout. Artificial tap water was prepared from distilled water by each laboratory to give 100 ppm hardness. After the deposition values were measured, the test plates were exchanged and read on three different photometers. The results shown in Fig. 13 indicate that comparable readings were obtained on the three photometers. But different degrees of water spotting took place in the three laboratories. In fact, the significant differences consistently obtained in the three laboratories have been traced to previously unsuspected differences in the water action in these three supposedly identical dishwashers.

To insure that the photometers remain in agreement, we use a series of diamond scribed glass plates having well established values.

Conclusion

The only real drawback to the use of the photometer is its inability to distinguish spots from film and perform a qualitative evaluation. This, in effect, is what the housewife does whenever she critically examines glasses from her dishwasher. Some washing conditions produce isolated spots, others give uniform filming while sometimes spots and film are found together.

WASHING TEST PERFORMED AT	PLATES MEASURED ON PHOTOMETER			AVG VALUE
	F	G	H	
LAB **F** (3 RUNS)	51.1 ± 4.4	50.5 ± 2.4	47.6 ± 2.0	49.8 ± 2.9
LAB **G** (3 RUNS)	24.7 ± 4.1	23.0 ± 3.8	26.5 ± 3.0	24.7 ± 3.6
LAB **H** (3 RUNS)	35.8 ± 2.8	29.4 ± 3.0	33.7 ± 2.4	31.6 ± 2.7
LABORATORY SPREAD	26.4 UNITS	27.5 UNITS	21.1 UNITS	25.1 UNITS

INTER- LABORATORY CORRELATION OF RESULTS

Figure 13

From a panel of housewives who use dishwashers we learned that tumblers with sharply contrasting isolated spots on the otherwise clean glass were much less acceptable than glassware with uniform filming of medium density. Surprisingly, a little film superimposed on spots generally improved the acceptability of the glassware to the housewife.

But it is characteristic of the integrating photometer that it measures the total light scattered by the deposit without regard to its character. Hence the correlation of linear instrument values with a nonlinear housewife is not presently possible. We do know, however, that the housewife will usually accept glassware with a deposition value up to 60 without regard to the character of the deposit. Filming alone is not objectionable below a reading of 100; but spotted glasses in the range from 60-100 may or may not be tolerated by the home user.

For this reason we believe further research on the qualitative aspects of deposition is needed. A scanning photometer similar to the device we first used in this investigation should be developed. There would be some advantage if the scanning instrument could use a cylindrical glass test specimen more closely simulating a water glass. Such an instrument, ideally, would be capable of counting spots, measuring density ratios and characterizing the deposit. Additional studies are also needed on the specular gloss or "sparkle" of washed glassware, as well as more information on what the housewife sees and how she reacts psychologically to glassware with filming and spotting.

In conclusion, the results obtained in measuring water spotting and filming during home dishwashing with the light-scattering photometer have been extremely satisfactory. The subjective element in glassware evaluation has been eliminated. Through the use of this instrument the major factors affecting spotting could be identified and controlled in test washing procedures. The number of test runs needed to obtain significant conclusions was markedly reduced. Most important of all, the sensitivity and precision of the method makes it especially useful as spotting and filming are progressively eliminated. Accurate measurements now can provide a guide to the development of improved dishwashers and detergents.

Acknowledgement: The authors wish to thank General Electric Co. for supporting this investigation and for permission to release the information presented here. Special thanks are due to Dr. J. L. Wilson for his helpful suggestions and for the use of certain data which we derived for Economics Laboratory, Inc.

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★

Lehn & Fink Div. Ups Three

Robert Varian was recently named to the new position of brand manager for "Noreen" hair products and "Medi-Quik," a new product of the Lehn & Fink division, Lehn & Fink Products Corp., New York. Earle K. Borman has been appointed assistant brand manager for "Medi-Quik" and George A. De Mott has been named as brand assistant for the "Etiquet" line of deodorants and "Lysette," it was also announced.

Mr. Varian, formerly product coordinator in the corporate new products department, is responsible for all promotional activities for both "Noreen" and "Medi-Quik." Prior to joining the firm, he was manager of promotion development at Revlon, Inc., New York, and was with Lever Brothers Co., New York, in the grocery division. Mr. Borman was formerly manager of sales administration in the Lehn & Fink division sales department, and Mr. De Mott was statistician in the same department, prior to their new appointments.

Foam Measurement

(From Page 57)

determined by the use of this device. If, after the foam height of a surfactant has been determined under dynamic conditions, the pump of the apparatus is stopped, the foam height of the surfactant under static conditions can be measured. Also, by recording static foam heights, measured at intervals, the relative foam stability or rate of foam decay of a surfactant can be measured. Foam decay measurements are recorded in Figures III, IV and V.

Summary

In conclusion, we have described the design and use of an apparatus for measuring the foam of surfactants under dynamic conditions, that closely resemble those of actual use. Although this device can be used for the measurement of surfactants ranging from extremely low foaming or non-foaming to high foaming, it is particularly suitable for accentuating the differences among the foam properties of very low foaming surfactants. Not only can the foam levels of a surfactant be determined under dynamic conditions, but the foam height and rate of foam decay can be measured also under static conditions. The apparatus as described gives reproducible results, is versatile, easy to operate and fairly inexpensive to construct.

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Aerosol Lubricant

(*From Page 84*)

for general purpose lubrication was included in the foregoing test, but it displayed such a degree of stick-slip that coefficient of friction data could not be determined. Other waxes were tested in addition to paraffin, but all were decidedly inferior to the fluorocarbon on unpainted wood, both buffed and unbuffed.

Other Characteristics

Thermal Stability: The film can be heated to its melting point (above 500°F) before it begins to decompose appreciably. Above 570°F, fumes are evolved that may be irritating or appreciably toxic. The label on the package in which it is sold provides precautionary advice, including a warning to avoid contact with tobacco products!

Chemical Stability: The film is chemically stable and highly resistant. It is completely inert to concentrated hydrochloric acid, and 30% solutions of alkali metal hydroxides at 100°F. Concentrated sulfuric acid will attack it at 100°C. but not at room temperatures.

Insolubility: The film is essentially insoluble in any known organic solvent, as well as in water. Once it has dried, which occurs very rapidly, it becomes difficult even to redisperse. It thus resists "softening" as well as removal on contact with solvents.

Non-Oiliness: This is a property that has very high appeal to the layman. Since the film is high-melting and insoluble, it is dry to the touch. It will not collect dust and dirt as a grease or oil or wax film will do. Only a light application is needed for lubrication, hence it will not "run" or "sag" as liquids do.

"Anti-Stick": Many names are assigned to this property, including "release," "anti-block," "anti-gall," and others, to describe the inhibition of the natural tendency of like and unlike surfaces to adhere to each other. The unusual ability of this new lubricant to overcome binding in close clearance is due to its lack of a tendency to exhibit stick-slip.

Nonflammability: Whereas the films of most lubricants will oxidize, some quite readily, the resistance of fluorinated compounds to both heat and oxidation is widely known. This is especially true of this film because it is so highly fluorinated. It cannot be classed as combustible by any definition.

Table I. Coefficient of Friction**

Surfaces*	Active ingred.	Paraffin wax	Graphite	Light mineral oil
Wood to wood — painted — unbuffed	.09	.09	.17	.25
Wood to wood — painted — buffed	.07	.08	.23	—
Wood to wood — (maple) — unbuffed	.14	.14	.17	.30
Wood to wood — (maple) — buffed	.10	.12	.18	—
Steel to steel — unbuffed	.12	.12	.20	.22
Aluminum to aluminum — unbuffed	.17	.17	.22	.18

*Both surfaces of test pair treated with lubricant.
**Average of determinations at four different loadings.

Applications

The unusual combination of properties described in the foregoing account readily points the way to a very broad list of uses. These include lubrication of doors that tend to bind in their frames, door hinges, locks and catches, window guides on both houses and automobiles, slide channels on storm sash and screens, furniture and cabinet drawers and guides, oven door hinges, appliance hinges, gears, bearings, chain drives on bicycles, lawn mowers and "go carts," nuts and bolts, power saw blades, auto brake backing plates and assembly pins, and many other sites of friction.■

Automobile doors are also within the range of applications for Du Pont's new, drv, aerosol lubricant, "Slickspray". Product forms ultra-slick film on any surface.

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Adams Joins W. G. Smith

Girard R. Adams recently joined the sales staff of Werner G. Smith, Inc., New York, producers of sperm oil products. He will contact industries in northern New Jersey, metropolitan New York, and southern Connecticut.

Mr. Adams was previously associated with General Aniline & Film Corp., New York, and Continental Chemical Co., Paterson, N. J.

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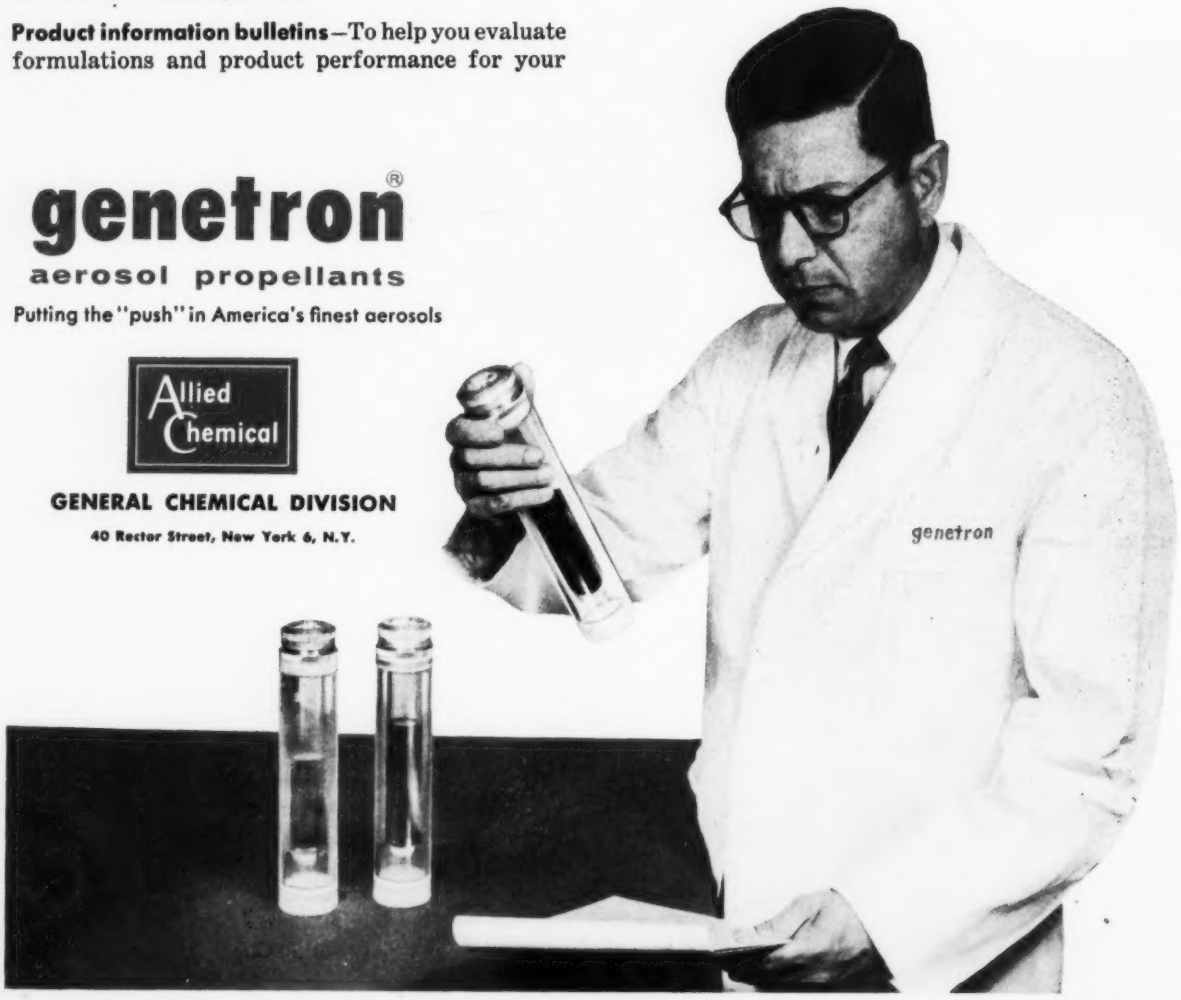

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PROTECTIVE LINING CORP. 601-39TH ST., BROOKLYN 32, N.Y. - ULSTER 4-3838

Packaging...

NEW Plastic Bottle
CLOROX
DISINFECTANT · BLEACH · STAIN REMOVER
For whiter, cleaner, sanitary washes
CLOROX

Some examples of filling with hydrocarbon propellants at Peterson Filling

PRODUCTS LAUNCHED WITH HYDROCARBON PROPELLANTS

Propel Sales UPWARD — Cost Less Per Package Unit

Here at Peterson Filling, we are fully equipped for high-speed filling of pressurized units utilizing hydrocarbons (propane, butane, iso-butane, etc.) as propellants *with consequent savings in your costs per package-unit.*

Ideal for a wide range of products, these propellants are popular for use with starches, polishes, cosmetics, shaving cream, window cleaners, charcoal starters and many others.

We also fill pressurized units using halocarbons, nitrogen, or carbon dioxide and other inert gases. For *all* your filling needs... *including gravity liquid filling*... write, wire or phone...

PETERSON
Filling and Packaging Co.

HEGELER LANE • DANVILLE, ILLINOIS

MARLEX* approved by all major detergent suppliers

The inherent advantages of lightweight, attractive, and unbreakable plastic containers are unquestioned—more sales appeal, less costly to ship, no breakage, to name a few. Equally unquestioned are the reasons why MARLEX high density blow-molding resins are widely approved for modern detergent containers.

MARLEX blow-molding grades cost no more! Yet, they provide high stress cracking resistance, great rigidity and strength per mil of wall thickness . . . as well as easy processing at high production rates—in short, superb and economical plastic containers.

Today, countless marketers of liquids—starches, bleaches, waxes, shampoos, cough syrups, and the like—are switching to containers made of MARLEX. Our engineers have pioneered the use of high density polyethylene and ethylene copolymers for blow-molded containers. The accumulated knowledge and experience of their work is available to those interested.

MARLEX is a trademark for Phillips family of olefin polymers.

For more information, see your container supplier . . . or contact us directly.

PHILLIPS CHEMICAL COMPANY
Bartlesville, Oklahoma
A subsidiary of Phillips Petroleum Company

PHILLIPS 66 MARLEX PLASTICS

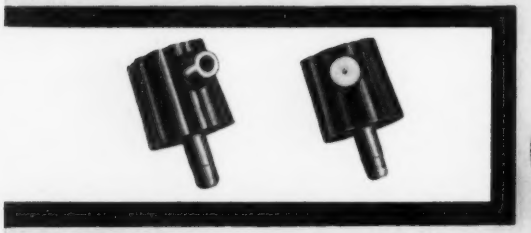
From the History of Aerosol Paints . . .

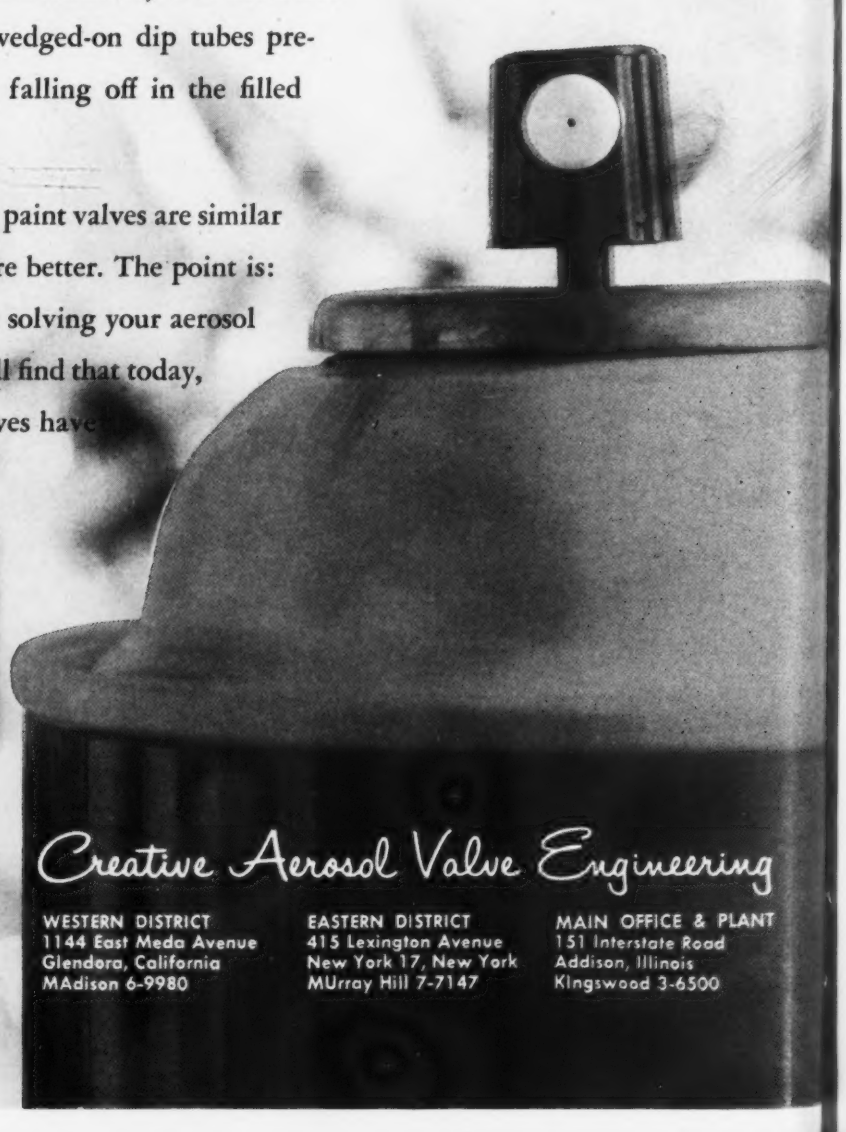
THE FIRST AEROSOL PAINT VALVE THAT REALLY WORKED

Back in 1954, Newman-Green created the valve that caused the major breakthrough in the aerosol paint industry. This valve *really* worked. It helped paint manufacturers develop one of the country's fastest growing industries. In a matter of months, this valve was tested, approved and accepted by the largest paint manufacturers. It became "the" valve for the entire industry.

This valve's simplified design had six major effects. 1) For the first time it made high-speed pressure filling possible. 2) It greatly reduced downtime through improved quality. 3) The metering orifices in the spray head could be reached for easier cleaning, if necessary. 4) The design eliminated inaccessible orifices which had been the sources of clogging in paint aerosols. 5) It assured uniform spray patterns. 6) The swedged-on dip tubes prevented the possibility of tubes falling off in the filled container.

Today's Newman-Green aerosol paint valves are similar to this original one. Only they're better. The point is: Look to the pioneer for help in solving your aerosol paint packaging problems. You'll find that today, as in 1954, Newman-Green valves have been proven best . . . by test.





NEWMAN-GREEN

Creative Aerosol Valve Engineering

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Glendora, California
MAdison 6-9980

EASTERN DISTRICT
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New York 17, New York
MUrray Hill 7-7147

MAIN OFFICE & PLANT
151 Interstate Road
Addison, Illinois
Kingswood 3-6500

1961 PACKAGING SHOW

Two chemical specialties makers address AMA Packaging Conference during 30th annual National Packaging Show

NEWEST developments in all phases of the fast-changing field of packaging were to be unveiled during the 30th annual National Packaging Exposition and concurrent Packaging Conference of the American Management Association. The 1961 Exposition was to be held Monday through Thursday, April 10-13, in the recently completed Exposition Center, McCormick Place, Chicago. Over 350 exhibits of packaging materials, supplies, containers, machinery, equipment and services were to be spread over acres of floor space in the new Chicago Exposition Center.

The concurrent Packaging Conference, also held at the Exposition Center, ran Monday through Wednesday, April 10-12. Theme of this year's conference was "Th ePower of Packaging."

Among the speakers scheduled to address the conference were Walter N. Plaut, president of Lehn & Fink Products Corp., New York, and Gilbert D. Miles, manager of packaging, toilet articles division, Colgate-Palmolive Co., New York.

Gilbert D. Miles

In his keynote address on "The Power of Packaging," Mr. Plaut pointed out how a strong packaging program, with well-defined objectives, can help overcome adverse economic factors most companies face today. Mr. Plaut was to speak at the morning session on April 10.

Mr. Miles' subject, "New Packaging – Who Needs It?", was scheduled for presentation during a consumer goods packaging session on April 11. In discussing the heavy flow of new packaging materials, methods and applications which during the past decade has had a powerful influence on consumer goods marketing, packaging has become clearly identified with total marketing strategy, according to Mr. Miles. In his talk, he was to point out how these many new developments in packaging have created a paradox instead of a panacea. How new packaging, particularly functional novelty, creates new marketing problems which demand careful study was also to be touched on. The nature of this challenge in terms of specific examples was to be outlined, and other problems created by changes in surface design were to be explored.

In addition to Mr. Plaut, the session on Monday morning, April 10, in the Assembly Hall, was to hear presentations on "Purchasing's Expanding Role in Package Dollar Management" and "The Care and Feeding of a New Packaging Idea."

Concurrent sessions on Tuesday morning, April 11, were to cover "Industrial Goods Packaging" and "Consumer Goods Packaging." Individual papers on industrial packaging included "New Developments in Shipping and Distribution," "New Concepts for Package Cost Improvement," "Distributors, Jobbers, Dealers and Your Packages," and a panel "What Is Practical Package Sell for Industrial Goods?" was to be the concluding feature of this session.

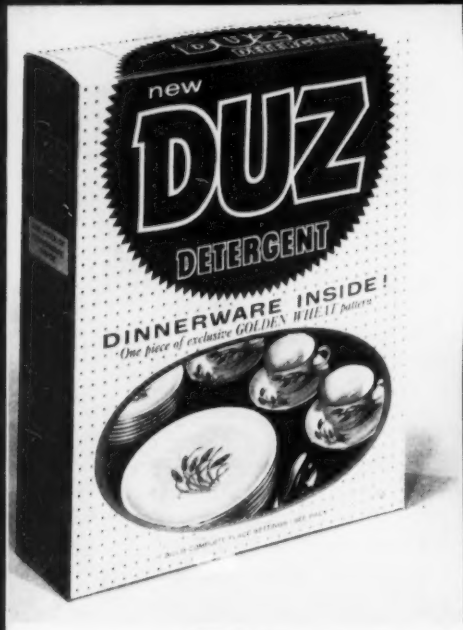
The session on consumer packaging was to hear the following talks: "New Packaging – Who Needs It?", "Printing and Color Control—What the Customer Sees," and "Package Systems Planning in Review—The World's Most Modern Bottling Plant." A three-man panel was to discuss various aspects of "Which Packages Succeed in the Shopping Center?"

Following the Tuesday luncheon, Thomas P. Wharton, president of Packaging Consultants, Inc., Washington, D. C., was to speak on "Packaging for the Government Today—For Industry Tomorrow."

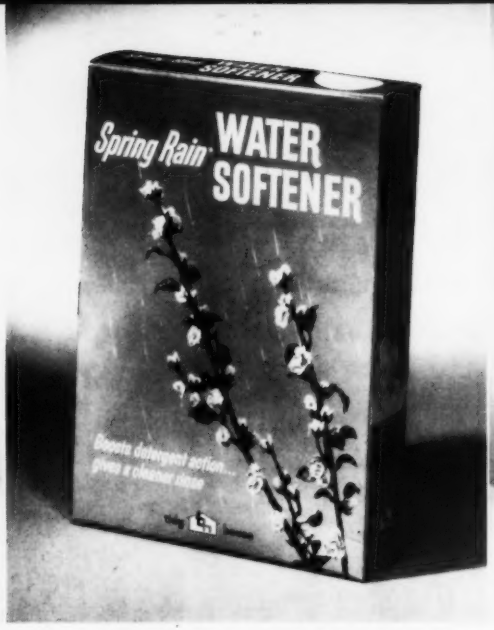
The final day of the conference was to be highlighted by

(*Turn to Page* 185)

Walter N. Plaut



"Duz"; "First Award—Technical Superiority of Gravure Printing"



"Spring Rain"; "First Award—General Merchandising Superiority—Soap"

"Comet"; "Merit Award—General Merchandising Superiority—Soap"

Award Winning Folding Cartons

PACKAGES for four chemical specialties products were among the "100 best cartons of the year" in the annual competition of the Folding Paper Box Association of America. The selections of the 16 printing and packaging experts who judged the competition were announced March 21 during the annual meeting of FPBAA, held at the Drake Hotel, Chicago. Awards were presented to 53 boxmakers whose work was represented among the winners.

A "first award" for "technical superiority of printing—gravure" was won by the package for "Duz" all-purpose detergent of Procter & Gamble Co., Cincinnati. According to the judges, "this box of detergent is an outstanding example of the printer's art executed with gravure equipment." The "Duz" carton, produced by Chicago Carton Co., is printed in five colors. The design consists of large solid areas and half-tones. Solids are red, blue, and gold; the halftone illustration of the dinnerware premium contained in the box is yellow, black, and gold.

"Spring Rain" water softener of Tidy House Products Co., Shenandoah, Ia., received "first award — general merchandising superiority—soaps." In the opinion of the judges " . . . the softness of its graphic design makes it stand out among the violent colors used for most soap and detergent packages." The "Spring Rain" carton, made by Container Corp. of America, Chicago, was decorated in four colors by offset lithography. Carl Strobe of Tidy House was the designer.

Another Procter & Gamble product, "Comet" cleanser, was given a "merit award" for "general merchandising superiority" in the "soap" products classification. This premium offer of P&G's in a "Cluster-Pak" of Mead Packaging, a division of Mead Corp., Atlanta, " . . . was done particularly well," according to the judges. They pointed out that "in the areas of soap and cleaning compounds, premiums and 'deals' are not only common, but are apt to be trite . . ." This unit was printed by gravure.

The "attractive package" for "Twinkle" copper cleanser, made by Drackett Co., Cincinnati was selected for a merit award in "general merchandising superiority—soap." The judges based their selection on the fact that the "Twinkle" carton ". . . is so appropriate for the product and because its appearance was considered striking enough to fight the battle of supermarket shelves." They said further "it is compact, yet accomplishes everthing that is required of it." Indianapolis Paper Container Corp. produced the carton, which was printed in four colors by letterpress and varnished.

"Twinkle"; "Merit Award—General Merchandising Superiority—Soap"

packaging notes

Standard Appoints Kotecki

Chester Kotecki has been appointed vice-president and general manager of Standard Molding

Chester Kotecki

and Cap Co., Hillside, Ill., injection plastic molders, it was announced recently.

Mr. Kotecki, an engineer in plastic mold design and tooling and high-speed automatic molding, is responsible for design, construction and production of several new proprietary items the company plans to introduce in the near future.

Standard Molding is completing construction of an addition to its present Hillside plant that will double production and design facilities. The expansion move includes installation of several new late model injection molding machines.

—★—

Eastern Can Plant

Ground was broken recently at Oak and Linden Streets Passaic, N. J., for the new plant and general offices of Eastern Can Co. The first unit of the new one story plant, comprising 80,000 square feet, will be ready for occupancy in mid-1961. Construction of an additional 40,000 square feet unit will get under way in a month or two, and long range plans are for a total of 160,000 square feet. The new plant, which is close to Eastern's lithography plant, will have a double railroad siding and ample facilities for handling truck shipments. According to Eastern officials, the Passaic plant will provide considerably expanded and more efficient production facilities as well as increased space for laboratories and general offices. New production equipment has been ordered and is ready for installation as soon as the first unit is completed. Eastern manufactures a complete line of round and square cans for all types of soaps, detergents and chemical specialties. The firm's offices and plant are now located in Brooklyn, N. Y.

—★—

Filler Bulletin Offered

U. S. Bottlers Machinery Co., 4015 N. Rockwell St., Chicago 18, has recently made available a new, 20 page rotary vacuum filler bulletin, which includes three additional basic machine models for high production liquid filling.

—★—

O-I Subsidiary Expands

Kimble Glass Co., a subsidiary of Owens-Illinois Glass Co., Toledo, O., recently announced a two-fold expansion program at its Vineland, N. J., plant, to permit the broadening of its scientific and laboratory glassware line. The addition of manufacturing and warehouse area and the construction of two new furnaces in the existing plant will more than double Kimble's' output of "Kimax," borosilicate, or "hard" glass, enabling the company to offer a complete line of scientific glassware.

The new construction, scheduled for completion before the end of the year, will consist of a 41,000 square foot extension of the plant's scientific manufacturing building and a 116,000 square foot warehouse adjacent to existing buildings.

Angold Imco Plant Head

Thomas J. Angold was recently named manager of the Kansas City plant of Imco Container

Thomas J. Angold

Co., a division of Rexall Drug and Chemical Co., Los Angeles. Mr. Angold, with Imco for the past nine years, was formerly supervisor of the secondary department.

—★—

O-I Builds New Plant

Owens-Illinois Glass Co., Toledo, O., announced recently it had begun construction of a plant in Jersey City, N. J., for the manufacture of blown plastic bottles. The plant, the sixth since the company introduced high density polyethylene bottles three years ago, is scheduled for summer completion. The plant and warehouse will cover 160,000 square feet.

—★—

Inter. Packaging Exhibit

The sixth international packaging exhibition, "Macropak-1961", a fair held every two years in the Netherlands, will be staged from May 2-9, in new exhibition halls in Amsterdam. The show is expected to occupy a net exhibition space of 14-15,000 square meters; with products from approximately 100 German, 80-90 British, 30 French, 25 American, 10 Belgian, and 30 firms from other countries being exhibited.

OWENS-ILLINOIS
SKILL IN PLASTICS
TAKES MANY SHAPES
TO SERVE YOU

PLASTIC FITMENTS for PRESSURE CONTAINERS

We don't make *all* of the plastic fitments for pressure containers. But we make a *lot* of them.

The fitments shown here illustrate the versatility of our equipment and people in making all sorts of things from plastic.

Ten plastic molding plants . . . with more plants to come . . . are strategically located.

If you're contemplating plastics, you will be wise to call on the long experience of Owens-Illinois.

PLASTIC FITMENTS
AN (I) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES • TOLEDO 1, OHIO
PACIFIC COAST HEADQUARTERS • SAN FRANCISCO

Imco Appoints Two

Imco Container, Ltd., (Canada), a division of Rexall Drug and Chemical Co., Los Angeles, recently announced the appointment of Harold F. West as sales representative. Imco maintains sales offices in Cooksville, Ontario, and Montreal, Quebec. Prior to joining Imco, Mr. West represented a Canadian manufacturer of raw materials, calling on manufacturers of plastic products for the industrial and consumer markets.

Harold F. West

Stuart Brown

It was also announced that Stuart Brown has been appointed a sales representative for Imco, assigned to the company's Los Angeles office.

Preston Joins PCA

E. Kirby Preston, formerly with Alken Corp., has joined Plastics Corporation of America, Stamford, Conn., as sales representative in the New Jersey and Pennsylvania areas. Earlier Mr. Preston had been with Koppers Co., Pittsburgh, Celluplastic Corp., Newark, N. J., and Parkway Plastics, Inc., New Market, N. J. PCA, a subsidiary of Richardson Co., Melrose Park, Ill., manufactures plastics and chemicals.

—★—

O-I Price Increase

Owens-Illinois Glass Co., Toledo, O., announced recently a general increase of its glass container prices, effective April 1. Explaining the increase, Ray H. Mulford, executive vice-president in charge of glass container operations stated, "By April 1, wages alone, the largest single factor in glass container production, will have risen by approximately 60 cents an hour, including base rates, fringe benefits, and incentive pay, since Jan. 1, 1957.

Owens-Illinois reported recently that 1960 net earnings after taxes dropped 18.7 per cent to $33,187,105, from $40,831,354 in 1959. Sales, on the other hand, rose more than $8,000,000 to $561,042,319, the highest in the company's history. Glass containers account for more than half of the company's annual dollar volume.

—★—

New Knox Sales Offices

Knox Glass, Inc., Knox, Pa., has established sales offices in Philadelphia and Baltimore, to take over the business formerly handled by the company's representatives in those areas, it was announced recently by Christopher H. Buckley, vice-president in charge of sales and marketing.

The Baltimore office, located at 841 East Fort Ave., is under the direction of William A. Seger who had been district sales manager. At Philadelphia, Walter Caskey, who had served as the Knox franchised representative in the area for 11 years, has been appointed district sales manager.

Newcomb Elected Vice-Pres.

Francis B. Newcomb was recently elected vice-president, sales, for American-Wheaton Glass Corp., Millville, N. J., a subsidiary of American Can Co. He was formerly a vice-president of the Canco division of American Can.

—★—

Dow in Plastic Containers

Plans to manufacture selected types of rigid plastic containers to expand its participation in the packaging industry were announced March 15 by Dow Chemical Co., Midland, Mich. Dow, a major supplier of plastic materials, said the plans are designed to accelerate development and use of plastics in the $19 billion packaging market and to provide additional outlets for its materials and technology.

Dow intends to operate in two major rigid plastics areas: formed containers and blownware. For the production of blownware, Dow will use equipment made by Hoover Ball and Bearing Co., Ann Arbor, Mich. In addition, Dow has contracted with Plas-Tainer, Inc., a Hoover subsidiary, for the manufacture of certain blownware products. The operation is capable of producing many products including bleach and detergent bottles.

Dow is installing production equipment at its Findlay, O., plant, using a process developed by Dow, as well as other process and equipment developments licensed by the Conex Division of Illinois Tool Works, Chicago.

Grant W. Cheney is rigid packaging project director and Corliss F. Cummins, marketing director, for plastics.

Dow's new program, according to Dr. W. C. Goggin, manager of the firm's plastics department, will be restricted to areas in which capabilities of the material supplier must be closely coupled to the needs of the user of packages—particularly in applications requiring a high degree of technology in both plastics materials and fabrication, as well as financial and marketing capability.

HOW MUCH DOES A CONSUMER COMPLAINT COST?

A LITTLE CARE IN THE CHOICE OF YOUR SUPPLIER WILL GO FAR IN CUTTING COMPLAINTS AND REJECTS.

That's why Precision Valve Corporation takes a lot of care in processing their valves . . . quality controls at every step of the way reduce the chances of rejects to a minimum, and continuing research reduces the minimum.

Take care... take Precision Valves for your aerosol products.

PRECISION VALVE CORPORATION
700 Nepperhan Avenue, Yonkers, N.Y.

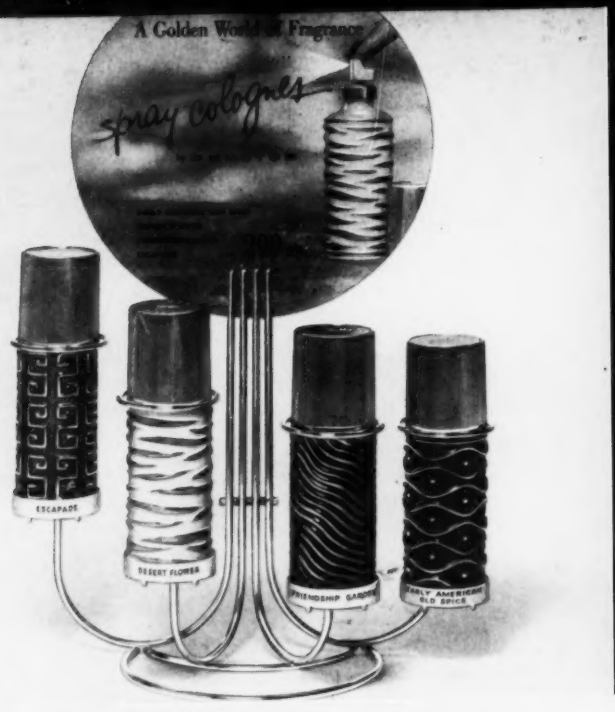
Allen B. Wrisley Co., Chicago, recently introduced "Magnetique" spray mist cologne. The new scent is packaged in a black aerosol spray flacon by Owens-Illinois Glass Co., Toledo, O., equipped with a cap and valve by Risdon Manufacturing Co., Naugatuck, Conn. The filler is G. Barr & Co., Chicago. A pyramid-like white, black and gold box by Weyerhaeuser Co., Tacoma, Wash., holds the two ounce container which retails for $2.00.

"Swan Liquid," a pink, light duty detergent, now being marketed nationally by Lever Brothers Co., New York, is recommended for fine fabrics, lingerie and dishwashing. Packaged in a translucent plastic container with a snip-top cap from Owens-Illinois Glass Co., Toledo, O., "Swan Liquid" is available in three sizes, 12, 22 and 32 ounces, suggested to retail at 39, 69 and 99 cents, respectively.

WHAT'S NEW

"Color-Kist," a new hair coloring shampoo, now available from Realistic Co., a subsidiary of Revlon, Inc., Cincinnati, is designed for beauty salon use exclusively. Developed to color, clean and condition hair in one treatment, "Color-Kist" concentrate is available in six shades: platinum, slate, brown, red, black and blonde. It is packaged in an eight ounce glass bottle supplied by Anchor Hocking Glass Corp., Lancaster, O., and topped with a white plastic cap by Owens-Illinois Glass Co., Toledo.

"Ozium Glycol-ized Air Conditioner," by Woodlets, Inc., Buffalo, N. Y., has been packaged in a Bombrini Parodi-Delfino aluminum aerosol dispenser manufactured in Italy. The container, designated No. 2000, is equipped with a metered valve, operated by a triggered handle manufactured by Alfco, Inc., Culver City, Calif. The 16 ounce container, guaranteed to release more than 2,000 air sanitizing sprays, is packaged in a box suitable for display purposes. White plastic cap by Owens-Illinois.


A Golden World of Fragrance
spray colognes
ESCAPADE
DESERT FLOWER
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EARLY AMERICAN OLD SPICE

K-LENS-M
K-LENS-M

PURO-AIRE
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Aerosol
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AND
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Toted
HAIR
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SPARKLE
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CLEANS
DEODORIZES
TOILETS and URINALS
UNCLE SAM
CHEMICAL CO., INC.

RAYETTE
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New
melts your
BEARD'S TOUGHNESS
...in seconds!
Old Spice
SUPER
SMOOTH SHAVE
100
REGULAR or MENTHOLATED
Old Spice SUPER SHAVE
New "Travel Lock" Push Button

COFFEE
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COFFEE
POT
CLEANER

Your Next Package Can Benefit From Polyethylene's Dramatic Sales Power!

The point of sale becomes your product's strongest sales tool when you package in an IMCO polyethylene container. Polyethylene allows almost endless variations in form and color and gives package designers a freedom they aren't allowed with conventional materials.

IMCO's experienced engineers can produce almost anything your designers can conceive. Mennen's new "Brake" package is a spectacular example. Presented a creative design, IMCO supplied the engineering to develop the vision into a reality. IMCO production facilities mold and decorate all elements of this unusual five-part package except the applicator and an interior rubber grommet.

It's high time you discover what IMCO polyethylene containers can do for your product. Prices are now directly competitive with glass and tin. Chemical improvements have made polyethylene impermeable to most things, even perfumed cosmetics, creams and household products. Our technical staff can assist you with tests, and quote prices on stock or custom-made bottles and jars. For immediate action, contact the Sales office nearest you.

IMCO

CONTAINER COMPANY

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Kansas City, Missouri
A Division of Rexall Drug and Chemical Company

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Los Angeles, Calif.
Cooksville, Ont., Can.

Mfg. Plants
Belvidere, N. J.
Cooksville, Ont., Can.
Kansas City, Mo.
Excelsior Springs, Mo.
Harrisonburg, Va.
Goleta, Calif.

IMCO **SELLS** THE BEST

new trade marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12 (a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of $25 must accompany each notice of opposition.

Hanzon — This for waterless hand cleansing cream. Filed Oct. 8, 1959 by Ernest W. Ekstrand, Washington, D. C. Claims use since August 1956.

Mediclean—This for cleaning, deodorizing and disinfecting. Filed June 8, 1960 by Mediclean, Inc., Los Angeles, Calif. Claims use since March 23, 1959.

Poolene — This for chemical preparation used in the maintenance of home wading and swimming pools. Filed June 20, 1960 by Acqua Lina Manufacturing Co., Brooklyn, N. Y. Claims use since May 9, 1960.

Myacide—This for rodenticide —namely, a rat and mouse bait in solid, grain, pellet form. Filed July 29, 1960 by Myzon Laboratories, Chicago. Claims use since July 12, 1960.

Blitzen—This for ice melting compound. Filed Aug. 2, 1960 by Western Chemical Co., St. Joseph, Mo. Claims use since Oct. 1, 1956.

Delise—This for hair shampoo. Filed Aug. 25, 1959 by Bristol-Myers Co., New York. Claims use since July 10, 1959.

Floor-Magic — This for detergent used on floors. Filed June 14, 1960 by Perry Austen Manufacturing Co., Grasmere, Staten Island, N. Y. Claims use since Nov. 25, 1957.

Worth—This for soaps. Filed June 22, 1960 by Les Parfums Worth de Paris, Inc., New York. Claims use since October 1945.

Lime-a-Way—This for all purpose solvent used for the periodic removal of lime deposits from the interior of mechanical dishwashing machines. Filed July 25, 1960 by Economics Laboratory, Inc., St. Paul, Minn. Claims use since Mar. 23, 1960.

Steameze—This for detergent cleaning compound intended primarily for use on the steam cleaning of automotive equipment and the like. Filed Aug. 23, 1960 by Turco Products, Inc., Wilmington, Calif. Claims use since Sept. 5, 1939.

The Finishing Touch for Any Car—This for polish in liquid and paste form for automobiles. Filed March 9, 1960 by H. D. T. Company Factors, Inc., White Plains, N. Y. Claims use since July 1927.

Kar-Life—This for automotive chemicals, namely, brake fluids, and anti-freeze solutions. Filed Feb. 29, 1960 by Warshawsky and Co., Chicago. Claims use since Oct. 28, 1959.

Metex Copper Brightener CI—This for copper brighteners. Filed March 23, 1959 by MacDermid, Inc., Waterbury, Conn. Claims use since Feb. 19, 1957.

Foam-Brite—This for wax for cleaning and polishing floors. Filed Aug. 9, 1960 by Eastern Research Corp., Philadelphia. Claims use since Aug. 1, 1960.

Pink Pay Dirt—This for silverware polish. Filed Aug. 10, 1960 by McGuire Enterprises, Gary, Ind. Claims use since April 20, 1960.

Ever-Kleen — This for toilet bowl cleaner sold in automatic dispensers. Filed Aug. 19, 1959 by Ever-Kleen Products, Inc., San Francisco. Claims use since May 25, 1959.

Iokel—This for detergent sanitizer. Filed May 5, 1960 by Diamond Alkali Co., Cleveland. Claims use since March, 1960.

Aldet — This for aluminum cleaner. Filed Aug. 26, 1960 by Wyandotte Chemicals Corp., Wyandotte, Mich. Claims use since June 1, 1960.

Washeen—This for a detergent for use in washing motor vehicles. Filed Aug. 29, 1960 by Wright Chemical Corp., Chicago. Claims use since Aug. 18, 1960.

Premier—This for liquid hand soap. Filed Aug. 30, 1960 by Purex Corp., South Gate, Calif. Claims use since April 25, 1960.

Rayco — This for automobile cleaner and compounds for cleaning the interiors and exteriors of automobiles. Filed Sept. 28, 1960 by Rayco Manufacturing Co., Paramus, N. J. Claims use since Feb. 26, 1959.

Lothiol — This for medicated shampoo for use on animals. Filed Oct. 18, 1960 by Sterling Drug Co., New York. Claims use since Aug. 11, 1960.

Baby-White — This for white shoe polish. Filed Oct. 12, 1960 by Podiatry Laboratories, New York. Claims use since March 6, 1959.

Franklin's Brite—This for general purpose cleaner. Filed Nov. 5, 1958 by Franklin Research Co., Philadelphia. Claims use since June 1, 1933.

Beats All—This for metal cleaner. Filed May 26, 1959 by Clearing Chemical Laboratories, Inc., Chicago. Claims use since May 4, 1959.

Fresh 'N' Brite—This for additive to starch said to enhance appearance of laundered fabric. Filed Jan. 7, 1959 by Armour and Co., Chicago. Claims use since Dec. 15, 1956.

Blast — This for crabgrass killer. Filed April 1, 1960 by L. Teweles Seed Co., Milwaukee, Wis. Claims use since Nov. 14, 1959.

United — This for hydraulic brake fluid. Filed May 23, 1960 by Echlin Manufacturing Co., Chicago. Claims use since May 11, 1960.

Flo—This for septic bacteria activator for use in septic tanks. Filed June 27, 1960 by Lien Chemical Co., Franklin Park, Ill. Claims use since June 13, 1960.

Bunny-Bleach—This for powdered bleach for use in laundering. Filed July 5, 1960 by Edward Livingston & Sons, Inc., Kansas City, Mo. Claims use since July 15, 1958.

Hg-16—This for insecticide for house and garden. Filed July 11, 1960 by Effective Products, Chicago. Claims use since Feb. 24, 1960.

Magna Krom—This for rust, scale and leak inhibitor and resistor usable in automobile radiators. Filed July 19, 1960 by Magna-Krom Manufacturing Co., Vandergrift, Pa. Claims use since April, 1954.

No-Work — This for gas oven cleaner. Filed Aug. 22, 1960 by Wilbert Products Co., New York. Claims use since Sept. 30, 1959.

Lactop—This for cleaning compound for general household and industrial purposes. Filed Aug. 23, 1960 by Turco Products, Inc., Wilmington, Calif. Claims use since Aug. 2, 1938.

Diaper Deotex—This for preparation for use as a bactericide and/or bacteriostat on diapers. Filed Jan. 18, 1960 by Upjohn Co., Kalamazoo, Mich. Claims use since Sept. 29, 1959.

Wade—This for paint, seal and varnish remover. Filed July 26, 1960 by Huntington Laboratories, Inc., Huntington, Ind. Claims use since Oct. 7, 1946.

Love — This for disinfectants and preparations for killing weeds and destroying vermin. Filed March 17, 1960 by Fisons Pest Control, Ltd., Harston, England. Claims use since Feb. 20, 1960.

Beauty-Glaze—This for cleaning and polishing composition for enamel and lacquer surfaces. Filed July 18, 1960 by Beauty Seal Chemical Corp., St. Louis. Claims use since September 1957.

Kitchen Shield—This for floor wax. Filed Sept. 22, 1960 by Boyle-Midway Division, American Home Products Corp., New York. Claims use since Aug. 30, 1960.

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Aerosol Quality Control - III

... The kind a marketing man would like from his contract aerosol loader

By Thomas S. Harrison*,
Lehn & Fink Products Corp.
New York

THE aerosol contract loader has been in a difficult position for a long time simply because he is, in fact, the manufacturing arm of many consumer package goods companies—companies that would like, in many cases, to do their own manufacturing, including filling of aerosols.

This is no new problem, of course; it has been around as long as aerosols have, and will be with us for a long time to come. But, let us look at the causes which are the bases of this problem. There are at least two major ones. First, and foremost, is cost. Most consumer product companies are convinced that the more manufacturing they can accomplish in their own facilities, the more economical it is for them. Many companies have a stated policy that only in clearly unprofitable cases will outside manufacture be considered. My own company is an example. I have seen another company build a huge aerosol volume with all its packing contracted, then take the ultimate step to set up its own lines. This, of course, is a battle of costs and it will continue.

It is conceivable, too, that the investment in aerosol filling equipment will some day become modest enough to permit even small companies to do their own filling. However, I do not pretend to be an expert in this field, and the contract filler may, because of his greater knowledge and understanding of aerosol techniques, be able to continue to produce at costs satisfactory to a substantial number of companies.

I am particularly concerned, however, with the second reason why companies tend to do their own aerosol filling. It is the problem of maintaining satisfactory quality control at a distance. Papers published in the past three months in this magazine gave some good counsel on a number of technical points which I am sure will help improve quality control procedures and lead to better products.

I have had a strong interest in aerosol products for several years now—originally in a technical capacity, but more recently as a marketer, and I am generally worried about what I consider to be a somewhat unrealistic approach to quality control as generally practiced today by contract fillers.

It appears to me that at present "satisfactory" quality control is the passing of certain rather sterile numerical specifications such as how much the can weighs, how much pressure it has in it, or how big such and such an orifice is. These specifications and many others written by the seller certainly are intended to insure product quality. But do they, actually? From the marketer's viewpoint, often, I don't think they do. Rather, they seem to be some hurdles that have to be cleared by the filler so that he can collect the bill. This is certainly less than an objective approach.

Thomas S. Harrison

In order to find the basis for a better approach to the problem of improving quality control, let us look at a more normal manufacturing situation. Here, I would take as an example a company which researches, formulates, purchases, packages, ships, and sells its own products, one that does the whole job. In the ordinary course of events in that company, once the research people have developed a product they think has marketing potential, the heads of the various operating functions of that company sit down and discuss the marketing plans with an eye to subsequent production of the item. If the product seems worthy of selling, a marketing strategy for that product is developed. This is made known, not only to the research people but also to the production people. This, I believe, is important, since at the beginning the production man is indoctrinated in the marketing point of

(*Turn to Page* 129)

*A paper presented during 47th annual meeting, Chemical Specialties Manufacturers Association, Hollywood, Fla., Dec. 7, 1960.

BREAK IN PROPELLENTS FROM DU PONT

THROUGH

New "FREON-11"S reduces corrosion and storage problems with products containing alcohol

Development of new "Freon-11"S removes a sales barrier to countless aerosol products already in existence — creates bright new sales prospects for many others that have never reached the production stage. This new propellent now minimizes the corrosive action that once limited both the storage life and quality of products containing alcohol and propellent-11.

What is "Freon-11"S?

Exhaustive research by Du Pont scientists has shown that corrosion of nonaqueous aerosol products containing alcohol and propellent-11 is caused by hydrochloric acid formed in a free radical reaction between the two—not by hydrolysis of the propellent. "Freon-11"S is Du Pont Freon-11* with a successfully proven stabilizer† that now inhibits this reaction in products containing alcohol.

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By inhibiting acid formation in aerosol products containing alcohol, "Freon-11"S:

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*FREON- and F- followed by numerals are Du Pont's registered trademarks for its fluorocarbon propellents.

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How many potentially successful aerosol formulations containing alcohol do you have on file that never reached the production stage because of stability and corrosion problems? How many completely new aerosol applications can this development open up for you?

Samples of "Freon-11"S can now be obtained from your nearest Du Pont sales office. For technical advice and information, write to: Du Pont Co., "Freon" Products Div., N-2420AC, Wilmington 98, Del.

†Patent applied for.

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Aerosol Quality Control

(*From Page* 125)

view. He understands just what is expected of the product when it reaches the store shelves, and — more important — when it reaches the consumer. This early indoctrination is not and cannot be spelled out in terms of production specifications; it is rather a feel for the product that is transmitted from the marketing group. And, in the normal course of events, this process occurs over and over again as a company adds more and more products to its line. In time a "feel" for the company's products develops in all its departments, including production. I call this a "marketing philosophy."

Let us say that this company is in the household products field and has been a leader in it for several generations. It has established a house name. In this company the "marketing philosophy" has become an integral part of any judgment made by its various operating heads, including the production man. Intuitively he knows it means quality of a high order, but again it is not, and cannot, be quality defined in numerical terms.

If, for another example, the company is one that sells on price, a much different "marketing philosophy" has developed within that company and with that production man. Further, if the company is in the cosmetic field, its head of production will know intuitively the relative degree of glamour each of his products must exude, depending on whether his company sells a prestige line or merely a commodity line.

I have not had direct experience with a large number of companies which sell aerosol products, and therefore do not know their many and diverse "marketing philosophies," but I do know that these philosophies exist and that they are all-important to the marketing people of each of them. And just as I would not know these philosophies in detail, neither would the production and quality control people of the aerosol loader know them. This, then, is a point where I believe we can look for a new approach to quality control.

New Approach

First, I believe that loaders should become acquainted with the product manager or marketing man at the client organization at the earliest possible stage. There is a common belief that the marketing people are totally inaccessible, that all contacts must be with purchasing group. In some cases this is true; but it is unfortunate. In my experience, however, an objective approach by the representative of the aerosol loader, who shows a real desire to learn more about the product he ultimately will be asked to produce, is looked on with favor. As a matter of fact, a new product idea often affords an entry to new business for an aerosol loader. Recognizing this, his starting point should be with the person responsible for new products and who is marketing-oriented. In any case, I believe that the aerosol loader must seek out the marketing people in the organization and learn what "marketing philosophy" exists, and specifically what kind of quality is desired for the products he may be asked to produce.

The second step for the loader is to pass this information along to the people in his organization who actually will do the producing and will check product quality.

Third, I believe the quality control people, armed with this information, should set up, in addition to their regular tests, some actual product use tests.

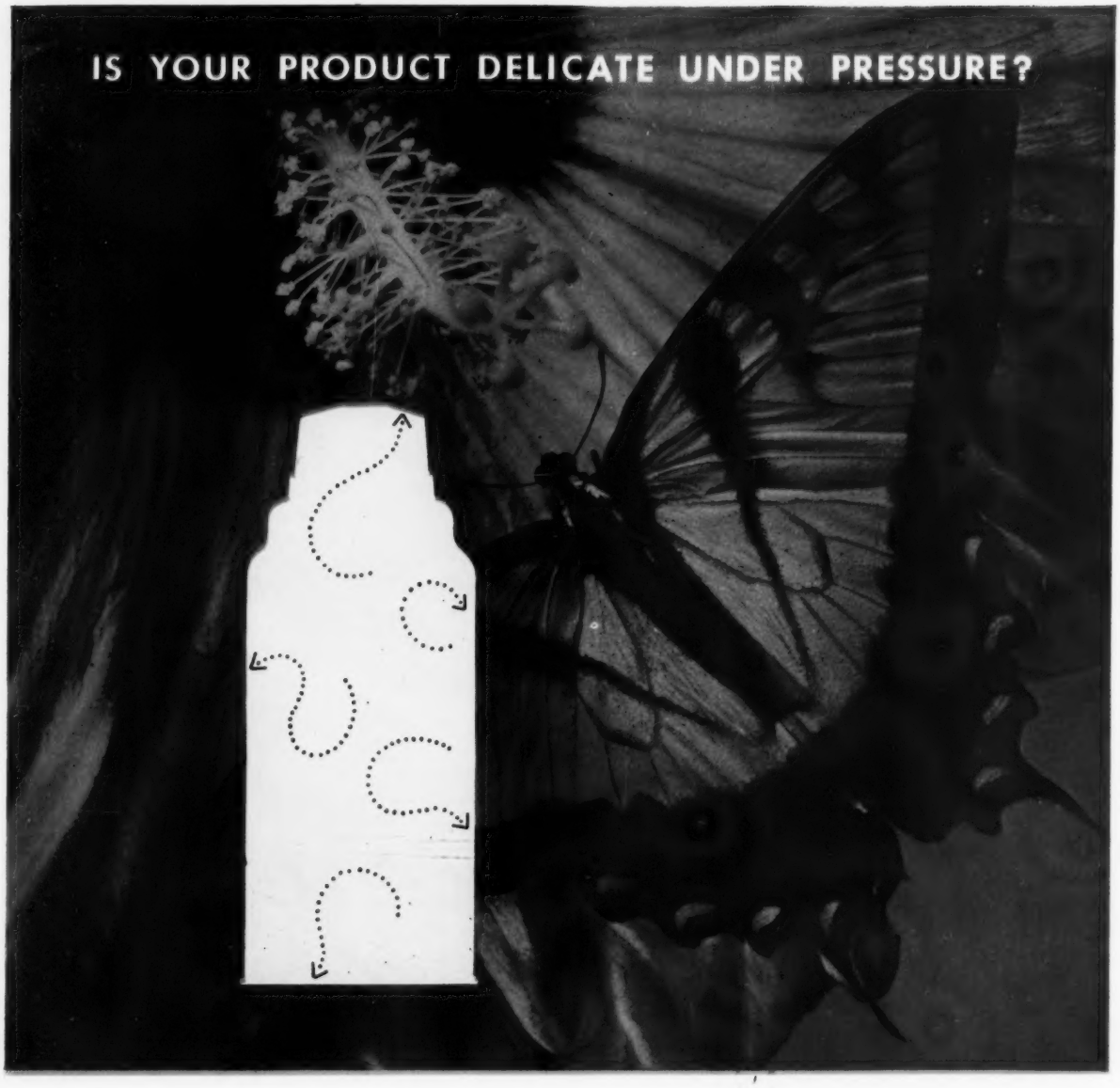
These can be done, I believe, on a very simple basis, using only periodic sampling. Tests should be planned in cooperation with the research and development people of the manufacturer. Knowing what the product is intended to do, they can determine by these use tests at least roughly if it does what it is supposed to do. This is not an attempt to withdraw responsibility from the manufacturer; it is rather a supplemental aid necessary to meet a simple problem created by the geographical separation of manufacturer and loader.

As you know, many manufacturers regularly station their own quality control teams in loader plants for production runs. This is expensive, and there is no reason why the loader cannot do this job. The added expense to the loader would be very little. He would be simply putting himself in the position of being the judge of the products' actual use quality at the production site.

Let me give you an example. Say that the contract aerosol loader were asked to fill a new aerosol furniture polish. His approach, I think, should be something like this. His sales representative would get in touch with the manager of that product and discuss with him what position the product is eventually to take in the market place. The product manager should discuss such things as whether price or superiority of product quality is to be the uppermost consideration. He should tell the filler's representative about the plans for selling, including, as far as possible, scheduling and so on, so that the filler will have at his command much the same information that the production man would have were the product to be produced internally.

The representative of the contract loader would then relate this information to his own pro-

(*Turn to Page* 181)



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Babbitt Appoints Zamata

Joseph P. Zamata was recently appointed manager of the aerosol division of B. T. Babbitt,

Joseph P. Zamata

Inc., New York. He will also serve as brand manager of aerosol products in the firm's household products division.

Mr. Zamata was previously associated with Consolidated Research and Manufacturing Corp., New Haven, Conn.; Connecticut Research Corp., Bridgeport, Conn., and Powr-Pak, Inc., also Bridgeport contract aerosol loaders.

—★—

Plasti-Kote Builds

Plasti-Kote, Inc., Cleveland, recently announced construction of an aerosol paint plant in Medina, O., said to cost over $1,000,000. The plant will have 100,000 square feet of manufacturing, laboratory and warehouse space, and an additional 5,000 square feet which will house the administrative and executive offices. The plant is being built on a five acre tract, with an additional 15 acres available for future expansion. Features of the plant will include a railroad siding, seven truck docks, and the latest in production lines, fireproofing, lighting and safety equipment. It was reported that the plant will eventually have a production capacity of 50 million cans of spray paint a year.

—★—

Aerosol Film Available

A seven minute, 16 mm, color and sound motion picture entitled "The Magic Button," is now available on a loan basis to companies, business and industry associations, and civic and social groups. The film, originally produced by the Aerosol Division of the Chemical Specialties Manufacturers Association, 50 East 41st St., New York 16, for television showing, shows a variety of household push-button aerosol product types in use by inhabitants of a typical American town.

Dragoco Features Aerosols

Aerosols and their components are the sole subject of the most recent issue of *Dragoco Report*, external house organ of Dragoco, Gerberding & Co., Holzminden, Germany. The publication's 52 pages are devoted to a feature article by Karl Bergwein, entitled "Aerosols in Practice."

Having dealt with the history and purpose of aerosols, Dr. Bergwein explains the aerosol principle discussing and illustrating each type in turn. Two phase and three phase systems are described. "Emulsion aerosols are a special form of three phase areosols," Dr. Bergwein explains and breaks

(*Turn to Page* 132)

Aerocide Appoints Two

Aerocide Dispensers, Ltd., Rexdale, Toronto, recently announced the appointment of Kenneth G. Mitchell, formerly operations manager, to executive vice-president. Mr. Mitchell joined Aerocide in 1955, to set up its quality control and laboratory. Prior to that he was plant superintendent with Castle Chemical Works, Ltd., Toronto, and a technical sales representative with National Silicates, Ltd.

Also, Ralph R. Legate, formerly associated with Precision Valve Corp., Yonkers, N. Y., has been named director of sales for the company.

Mr. Legate was Precision's Canadian sales manager for three years, covering all of Canada and the states of Michigan, Oregon and Washington. Prior to that he was Canadian sales manager for Thomas Sales Co., manufacturers of "Revlon" and "Breck" products in Canada.

Kenneth G. Mitchell

Ralph Legate

down this group into: foam emulsion aerosols, oil in water type and water in oil type; nonfoaming emulsion aerosols, water in oil type and oil in water type. The mechanism and special features of each type are discussed in simple and clear terms. Cosmetic aerosols are grouped into dry spray, surface sprays, and foams.

"The propellant is the component of greatest importance to the functioning of an aerosol pack," the author states and discusses fluorinated hydrocarbons, nitrogen, propane and butane, carbon dioxide, vinyl and methylene chlorides. Constants and characteristics of the different propellants are tabulated and such pertinent questions as their effect upon plastic valve materials are discussed.

After briefly touching upon various types of concentrates, the author turns to the subject of containers, tinplate, aluminum, plastic, and glass. Valves and solvents receive attention. Tests pertaining to aerosols are briefly described. Perfuming of aerosol products is discussed and 26 formulations for various types of aerosols are appended.

The text is supported by illustrations and enlivened by a number of cartoons.

—★—

Risdon Ups Officers

Risdon Manufacturing Co., Naugatuck, Conn., has advanced five officers and elected two new directors it was announced recently.

Lewis A. Dibble, an executive of the firm for 47 years and its president since 1927, has been elected to the new post of chairman of the board and chief executive officer. Succeeding him as president is Lewis A. Dibble, Jr., executive vice-president, who has been with the firm since 1946. Dibble Jr. started as a management trainee, served as inter-plant engineer, assistant factory manager, administrative vice-president and executive vice-president.

Harold W. Turnblom, assistant treasurer, has been elected treasurer, and Roger G. Goodeve, assistant secretary was named secretary. Both positions were held for more than 20 years by Harold P. Baldwin, who has retired. Mr. Baldwin continues as a director of the firm. Carroll E. Retallick has been named assistant secretary.

Lewis A. Dibble, Jr.

Lewis A. Dibble

Newly elected directors are Donald W. Henry, Waterbury, Conn., attorney, and Edward G. R. Whitecraft, New York investment counselor.

Seaquist Appoints Fisher

Seaquist Valve Corp., Cary, Ill., manufacturer of Sea Spray NS-31" and other aerosol dispensing valves just has appointed M. M. Fisher Associates, Chicago, to handle its advertising and sales promotion. Seaquist also produces the new patented Gulf Oil Company S. A. Valve under a license agreement.

—★—

Lefevre Names Mitchell

Lefevre Chemical Co., recently appointed Edward W. Mitchell as chief chemist at its Oklahoma City plant. Mr. Mitchell, who also heads the product development department, is in charge of production of the company's "Big D" deodorant, "Ex-it", and "Corral D" insecticides.

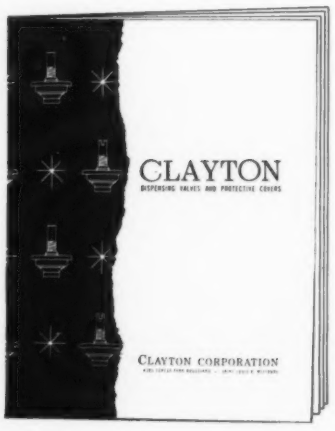
Prior to joining the firm, he worked with Oriental Refining Co., Denver, and Julius Hyman Co.

Edward W. Mitchell

—★—

Aerosol Dispensing Guide

A new guide to pressurized dispensing of foam, cream and liquid products is being offered free of charge to all makers or packagers of aerosol products by the Clayton Corp., 4205 Forest Park Boulevard, St. Louis. Dispensing valves and protective covers are offered for all types of foam, cream or liquid products in the cosmetic, pharmaceutical, automotive, household fields.



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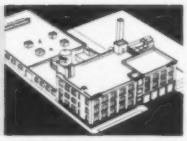

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aerosol patents

No. 2,968,427. Valve for Aerosol Container, patented by Philip Meshberg, 290 Euclid Avenue, Fairfield, Conn. Described are valve means for controlling the discharge of a measured amount of fluid under pressure from a container comprising a tubular valve housing having a transverse apertured wall extending thereacross to form one end of a measuring chamber, and having a laterally projecting flange at the other end provided with a peripheral wall; an outwardly dished resilient valve disk having a central bore therein disposed within the peripheral wall; means mounting the housing on the container including an outwardly domed portion extending over the valve disk and having an indented portion clamping the disk to the flange adjacent the periphery thereof whereby the center is free to flex; a valve stem mounted in said housing for movement between a normal sealing position and a normal discharge position and having a portion at the outer end thereof extending through said bore in the valve disk and the domed portion extending thereover and projecting beyond the container, said stem having a sealing portion cooperating with the disk in normal sealing position to prevent passage of the fluid from the container and a portion at the inner end passing through the apertured wall of the housing to guide the stem against tilting; and spring means on the housing urging the stem into sealing relation with the disk, manual movement of said stem inwardly against the spring means a predetermined distance from normal sealing position to normal discharge position causing the valve disk to flex inwardly and out of sealing relation with the stem to permit passage of fluid from said housing, said domed wall providing space for permissive swelling of the valve disk and said flexed valve disk aiding the return of the stem to sealing relation.

No. 2,973,040. Fire Extinguisher, patented by Kenneth B. Covert, Marinette, Wis., assignor to Safe, Inc., Marinette. Disclosed in this patent is a package comprising a pressure-type container having a valve-controlled opening charged with a fire-extinguishing dry powder and a gaseous propellant confined in the container under the vapor pressure of the propellant, the powder being sodium bicarbonate and the propellant being dichlorodifluoromethane in an amount from about 2½% to about 5½% of the powder by weight.

New Aerosol Container

New type aerosol containers for fragrance products that simulate more expensive refillable perfume pressure packages was introduced recently. A development of Blanchard Perfumes, New York; Metal Fabrications, Inc., Waterbury, Conn., and Aero-Chem Fillers, Inc., Bridgeport, Conn., the container is being used for four Blanchard fragrances.

The two-ounce Peerless tube, is fitted with an aluminum collar which is buffed and gold dye lacquered. Aluminum cap can be finished in any color. Aero-Chem loads the fragrance product in container equipped with VCA valve and actuator button.

Novel, low cost aerosol fragrance spray container has aluminum collar which is buffed and gold dye lacquered. Four bouquet sprays by Blanchard Perfumes, New York, are presently being packed in new container. Products retail for $1.50.

In addition to "Intrigue," Blanchard is packaging "Jealousy," "Conflict" and "Evening Star" bouquet sprays. 1.7 ounces of spray in the new containers retail for $1.50.

—★—

Automatic Overcapper

A new fully automatic overcapping machine for aerosols has been developed by Pneumatic Scale Corp., Quincy, Mass. Capable of speeds of from 120 to 200 containers per minute, the machine can be geared to slower rates as required.

Essentially, the new unit consists of an overcap feeder working in conjunction with a straight line conveyor and power driven dial for container control. Conveyor and star wheel move continuously to push containers through the cap chute release point. Each container strips off its own closure, then moves under a rubber faced, spring mounted wheel which seats the cap tightly.

The machine can apply a wide range of closures and handle a variety of container sizes and shapes with a minimum of special parts, according to the manufacturer. The overcapper may also be used to apply friction closures to containers other than aerosols.

—★—

Odell Associates Merge

Norman Odell Associates, Inc., New York public relations counsel for the Aerosol Marketing Development and Publicity Committee of the Aerosol Division of the Chemical Specialties Manufacturers Assn., has just announced their association with de Garmo, Inc., New York, advertising and public relations firm. Norman Odell Associates now operates as a division of de Garmo, with headquarters at 205 E. 42nd St., New York 17, N. Y. The new telephone number is Murray Hill 4-7430.

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Aerosols

SCIENCE AND TECHNOLOGY

edited by **H. R. SHEPHERD**, Aerosol Techniques, Inc.
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Contents: Aerosols in Modern Industry — Theory and Practice of Aerosols — The Metal Container — Glass and Plastic Containers — Valves — Propellants — Laboratory Techniques — Factors in Formulation Design—The Odor of Aerosol Products—Cosmetics: Fragrance and Personal Hygiene Products — Hair Cosmetics — Pharmaceutical Products — Food Aerosols — Pesticides — Coating Compositions — Household and Industrial Specialties.

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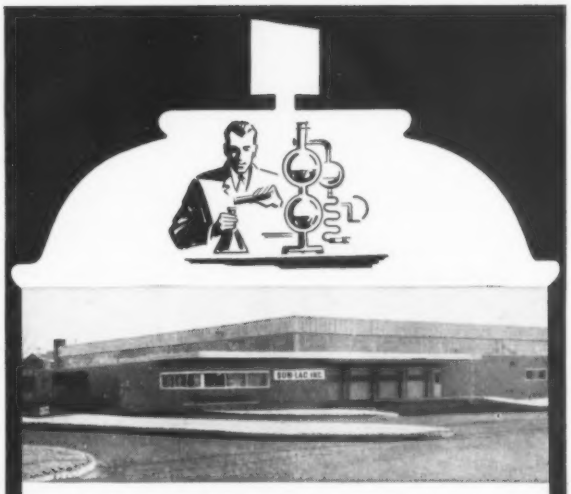

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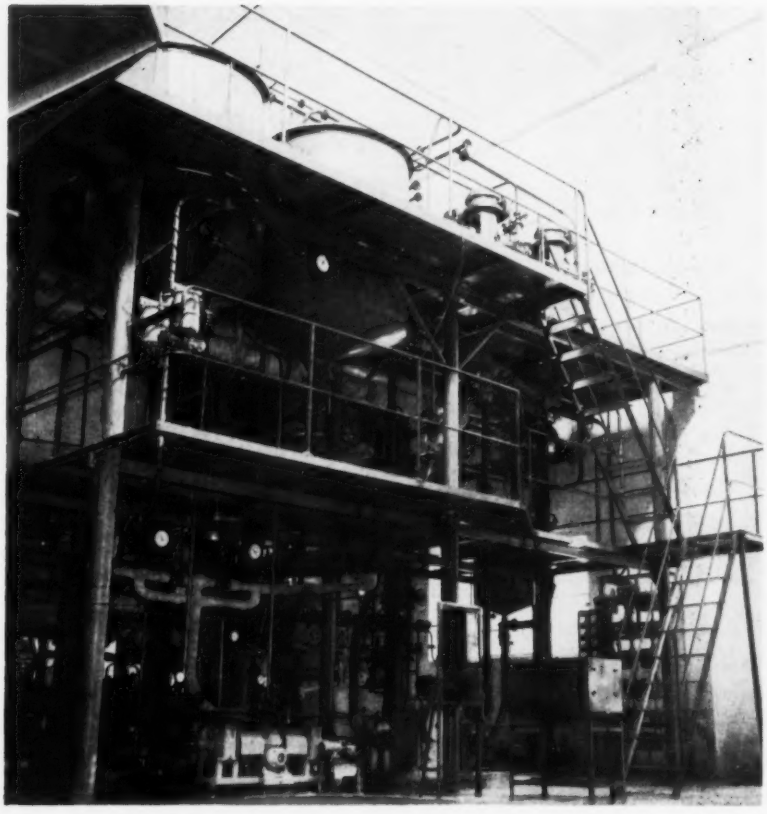

General view of the continuous and automatic saponification plant for fatty acids.

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Automatic control of free caustic in soap with an accuracy of ± 0.01 %

Very accurate control of the sodium chloride content in soap from zero to any required value

Maximum percentage of unsaponified saponifiable matter 0.05 %

Utilities required for 1,000 Kgs. of soap 62 — 63 % fatty acids:

Steam at 2-3 Kgs. sq. cm.	:	65-70 Kgs.
Electricity	:	10-12 KWh.
Labor	:	1 man.

OUR MANUFACTURING PROGRAM INCLUDES:

Plants for Cooling and Drying all types of soap
Continuous and Automatic toilet soap lines
Refining vacuum plodders type DUPLEX and TRIPLEX
Automatic mixers and automatic soap cutters

Automatic soap stamping machines for standard and capacity molds

Continuous neutral fat saponification plants.
Continuous sulphonating plants and spray driers for synthetic detergents
Continuous fat splitters and continuous fatty acids stills
Plants for general chemical industry

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Please ask for our technical literature and bulletins.

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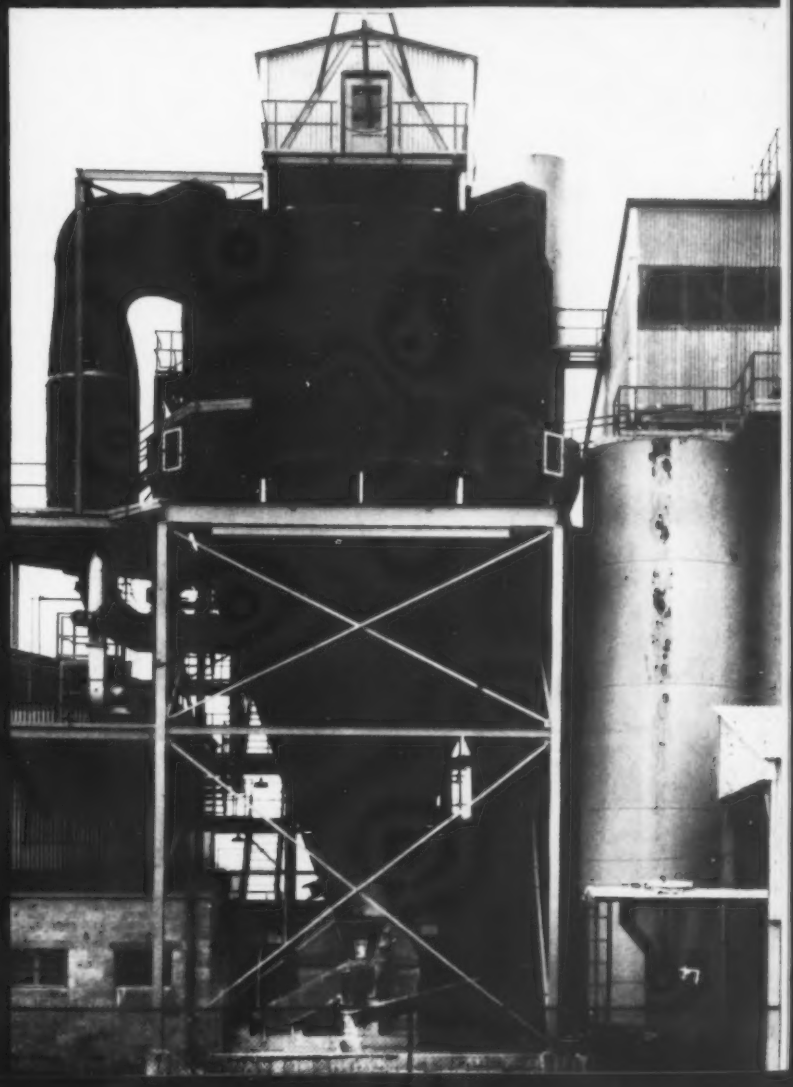
Production....



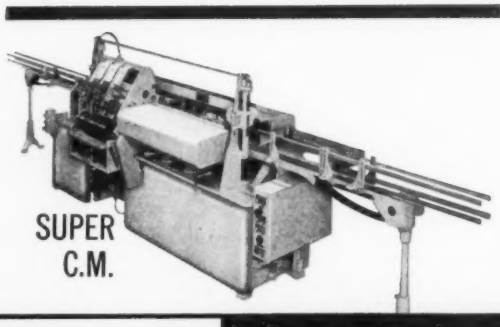
Plastic or glass...only the WORLD Super C.M. offers 100% labeling versatility

New container shapes, in plastic or glass, put labeling equipment to the test! Merchandisers want basic container appeal on the retail shelves and they go all-out to get it from packaging designers.

With these constant shifts in shape will you be able to cope with labeling changes, too?

The WORLD Super C.M. labeler guarantees you that protection . . . You can apply front, back, shoulder, bias or full wrap-around-neck labels *NOW!* Moreover, you'll be able to accommodate future label changes *as* well as container changes . . . at speeds compatible to the rest of your packaging line.

With tomorrow in mind, get the full facts on Super C.M. performance today. You'll be glad you did.



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Soap/Detergent Bar Standards

ASTM Committee D-12 on Soaps and Other Detergents meets, formulates a tentative standard for soap/detergent toilet bars, suggests punch card classification system

CHANGES in the habits of household and industrial consumers of soaps and detergents and recent advances in fat and detergent technology were reflected in the activities during 1960 of Committee D-12 on Soaps and Other Detergents of the American Society for Testing Materials. Reports on the year's accomplishments and future plans were presented and discussed at D-12's annual meeting held at the Park Sheraton Hotel, New York, March 6 and 7.

Suggestions for a tentative standard recognizing the combination soap/synthetic toilet bar were one of the highlights of the meeting. Under the designation "Hard, Soft or Sea Water Toilet Soap" the suggested standard was developed by subcommittee S-2, Specifications for Soaps and Synthetic Detergents, and presented by William H. Joy, Bell Telephone Laboratories, Inc., S-2 chairman. Actually it is a modification of an existing military specification. Full text of the suggested standard follows:

Combination Toilet Bar

Scope

1. These specifications cover hard, soft or sea water toilet soap.

General Requirements

2. (a) Hard, soft or sea water toilet soap shall be a soap well made from a compatible mixture of synthetic organic detergents, foaming agents, sodium carboxymethyl cellulose, sodium silicate with or without high quality sodium or potassium soaps.

(b) The soap shall be white in color and free from objectionable odor.

(c) The soap bar shall be firm, smooth and homogeneous in appearance. It shall not crack or crumble initially or after intermittent use.

(d) The soap shall lather freely and be entirely soluble in hot or cold hard, soft or sea water. It shall produce the characteristic soapy (slippery) "feel" in the hand washing operation.

Chemical Composition

3. Hard, soft or sea water toilet soap shall conform to the requirements as to chemical composition given in Table 1. The percentage of matter volatile at 105°C shall be calculated on the basis of the soap as received, but all other constituents shall be calculated on the basis of material containing 12 per cent of matter volatile at 105°C.

Basis of Purchase

4. Hard, soft or sea water toilet soap is subject to a possible gain or loss of weight, depending on atmospheric or storage conditions, or both, or on packaging, as a result of fluctuations in the moisture content. Changes in the moisture content result in a corresponding change in the percentage of total solids or anhydrous soap content, or both.

(a) The material shall be purchased by net weight, provided the matter volatile at 105°C is neither above nor below 12 per cent.

(b) Deliveries containing more than 12 per cent of matter volatile at 105°C shall be rejected without further test.

(c) On deliveries containing less than 12 per cent of matter volatile at 105°C, settlement shall be made on the basis of a product containing 12 per cent of moisture, that is, 0.88 lb. of non-volatile matter shall be considered 1 lb. of soap.

(d) When the material conforms to these specifications on a calculated 12 per cent moisture and volatile matter basis, the net weight of the material to be paid for shall be calculated as follows:—

$$W = \frac{R \times (100-L)}{88}$$

Where:

W = net weight of material to be paid for on a 12 per cent moisture and volatile matter basis,

R = net weight of material as received, and

L = percentage of loss at 105°C.

Methods for Sampling and Analysis

5. (a) The material shall be sampled and analyzed in accordance with the Methods of Sampling and Chemical Analysis of Soaps and Soap Products (ASTM Designation: D 460) and Chemical Analysis of Soaps Containing Synthetic Detergents (ASTM Designation: D 820).

(b) The purchaser reserves the right to use any additional available information to ascertain whether the material conforms to these specifications.

The above specification was originally intended to replace and supersede D 593-42, Standard Specifications for Salt Water Soap. After a lively discussion it was decided to retain the older standard under the modified title "Salt Water Soap (Coconut Oil Type Bar)." Reason for this decision: The older type of bar is still an article of commerce, although definitely on the wane.

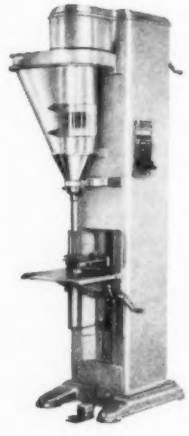
The newly introduced specification will bear the tentative title "Hard, Soft and Sea Water Combination Toilet Bar."

Standards for building maintenance products are the target of another important project put forward by Mr. Joy's subcommittee. A newly formed task force to study this subject will include among others H. R. Suter of Wyandotte Chemicals Corp., Wy-

FMC Auger Fillers deliver flexibility required by Pennsalt product diversity

Pennsalt Chemicals Corporation, in developing new products for new markets, required ever-increasing flexibility in its packaging machinery. Their cleaning compounds and swimming pool chemicals, for example, have different flow characteristics, densities and other properties. To obtain needed packaging flexibility for these and other products, and to assure speed and accuracy, Pennsalt uses 14 automatic and semi-automatic FMC Auger Fillers. They package a broad line of chemicals in metal cans, glass jars and plastic containers in a variety of sizes ranging from 1 pound up to 10 pounds.

Successfully packaging a varied "product mix" is the rule not the exception for FMC Auger Fillers. For example the semi-automatic Model EG-1 shown here, is equipped with four different filling methods—cam volumetric, packing, gross weighing, and combined volumetric-vacuum—to handle an almost limitless variety of products and containers. Quick, simple changeover from one product and container to another make this unit ideal for short and medium runs in large and small plants alike. Many other models are available for automatic or semi-automatic operation, tight or loose fills, long or short runs to fill powders, granules and certain pastes. Production run accuracy has proved outstanding in filling cans, jars, boxes, bags, etc. from 1/2 oz. to 20 lbs. Speeds as high as 140 per minute.



For the full story of the FMC line of Auger Fillers, write for Bulletin P-811.

Putting Ideas to Work

FOOD MACHINERY AND CHEMICAL CORPORATION
FMC Packaging Machinery Division
Stokes & Smith Plant
4928 SUMMERDALE AVENUE, PHILADELPHIA 24, PA.

Table 1. Chemical Requirements

Moisture and matter volatile at 105°C, max., per cent	12.0
Synthetic organic detergent, anhydrous, salt free, min., per cent	25.0
Sum of anhydrous sodium or potassium soap and synthetic organic detergent, min., per cent	65.0
Free alkali, calculated as NaOH, max, per cent	0.2
Free acid, calculated as oleic, max., per cent	0.2
Sodium silicate as Na_2O: 3.25 Si O_2, max., per cent	2.0
min., per cent	0.5
Sodium carboxymethyl cellulose, min., per cent	1.0
Total water insoluble matter, max., per cent	2.0
Rosin	None
Starch	None
pH (0.5 per cent solution), max., per cent	10.3
min., per cent	8.5

andotte, Mich., secretary of D-12, Mr. Hassler of Armstrong Cork Co., Lancaster, Pa., and Dr. Linfield of Armour & Co., Chicago.

Scouring Powders

Skelcton specifications for scouring compounds in powder form were proposed by a task group set up only last year under the chairmanship of C. A. Gerardi, United States Testing Co., Hoboken, N. J. This proposal is patterned after existing Federal Specification PS 00311, used by the General Services Administration and the Veterans' Administration.

Three types of scouring powders are proposed: Type I with strong bleaching agent such as hypochlorite, Ia with mild, Ib with strong abrasive; Type II with mild bleaching agent such as perborate, IIa and IIb as above; Type III for use on fine marble and other sensitive surfaces. White or another pleasing color and uniform composition are stipulated for all three types. They may or may not contain perfume.

Standard Specification D 499-48 for White Floating Toilet Soap will be modified in the near future to specify two types: Type I—framed and Type II—unframed. "Ivory" (P & G) and "Swan" (Lever), the two major national brands of floating toilet soap are both of the unframed type, it was pointed out.

Specifications for alkaline soap powder, D 534-42 will be checked against GSA specifications which set an upper limit to the anhydrous soap content of the products. Current ASTM standard shows only a minimum.

This year many of the ASTM standards for soaps and detergents come up for reaffirmation. Most of these were reaffirmed at the meeting with one provision: Wherever the general requirements stipulate "fats" this stipulation is to be altered to read "fats and/or fatty acids" to conform with actual practice in the industry. In the case of liquid toilet soap (D 799-51) the same considerations call for a change of "pure vegetable oil" to "vegetable oil and/or distilled fatty acids."

New Classification

A report on the activities of subcommittee T-2, Joint Committee on Analysis of Soaps and Detergents with the American Oil Chemists' Society, was presented by Jay C. Harris, Monsanto Chemical Co., Dayton, O., chairman of T-2 and chairman since 1950 of Committee D-12. T-2 consists of 26 task groups. Task group 1, Harry C. Speel, Universal Oil Products Co., Chicago, chairman, is seeking a standard classification system for surfactants. Mr. Speel suggested adoption of the system developed and published recently by the International Commitee on Detergency, (Comite International de la Detergence, 70 Champs Elysees, Paris 8e, France). This body includes representatives from 12 European and two South American countries. The United States is not represented.

The C.I.D. classification is based on the decimal system and, according to Mr. Speel, lends itself most readily to use on the IBM and other electronic punch card systems. It is said to be suitable for both analytical and general purposes.

Detergent Analysis

The 1960 supplement of Bibliographical Abstracts of Methods for Analysis of Synthetic Detergents is ready for publication, according to Mr. Harris, chairman of task group 3, responsible for compilation of these supplements.

Robert M. Kelley of Colgate-Palmolive Co., chairman of task group 4, Separation of Active Ingredients, reported that the ion exchange method previously attempted, was found too difficult to be practical. A preliminary method based on a different approach is expected to be ready in the near future.

Progress was reported by task group 8, charged with Determination of CMC. However, the method developed is still erratic in measuring percentages below a certain fractional level.

Substituting for Lloyd E. Weeks (Monsanto), chairman of task group 16 on Qualitative Identification of Surfactants and Organic Builders, E. A. Setzkorn of Continental Oil Co., New York, reported on the use of ion exchange for separation of different surfactant types.

Mass spectrophotometry is the only reliable method established so far for the measuring of detergent alkylate by molecular weight distribution, according to C. A. Cohen of Esso Research and Engineering, Linden, N. J. Mr. Cohen described the activities of subgroup B of task group 21 on Detergent Alkylate. Because this method is usually outside the scope of smaller laboratories, a cryoscopic method has been developed as an alternative. It is, however, a second best, Mr. Cohen said.

E. W. Blank of Colgate-Palmolive Co., chairman of task group 22 on Determination of Sequestering Power and vice chair-

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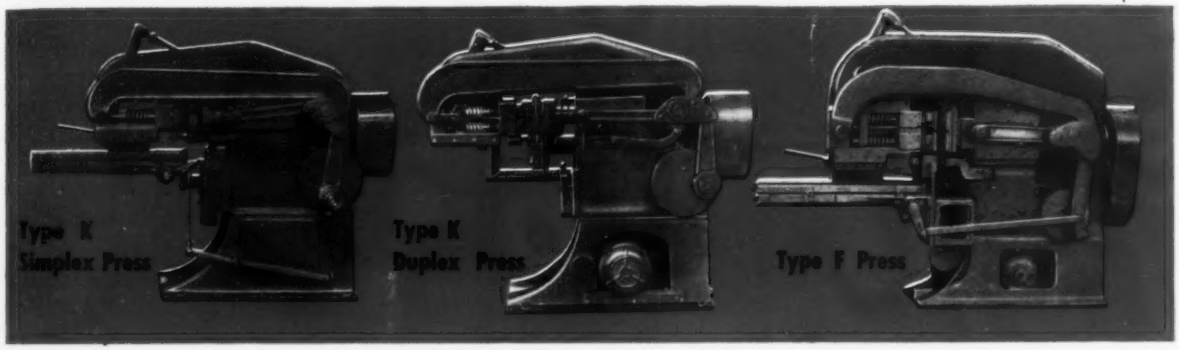
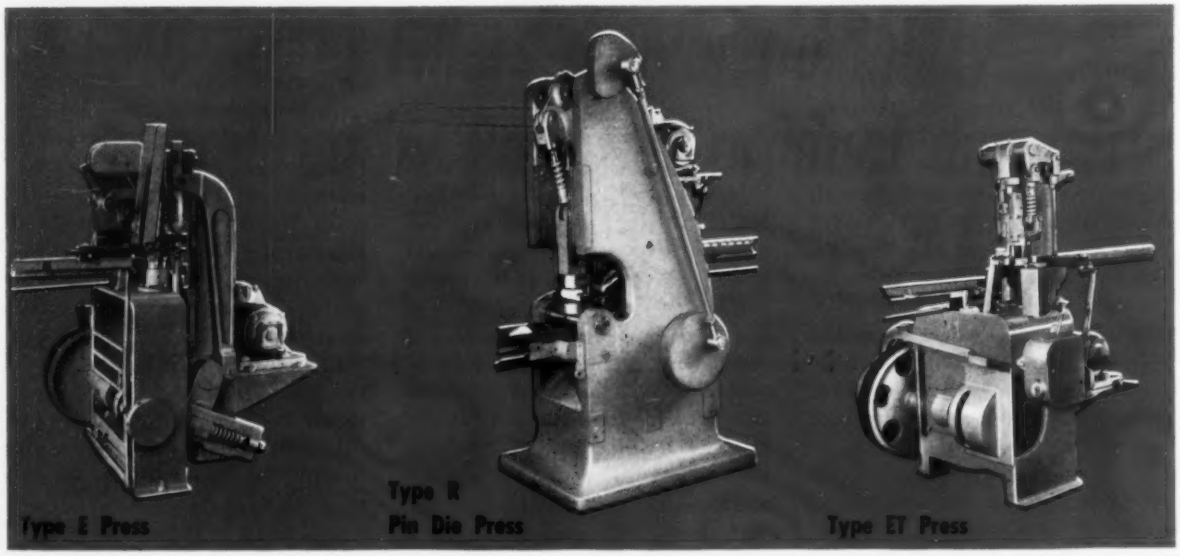


For toilet or laundry soap cakes of any shape (except highly convex cakes) with side band. Speeds of 120-140 cakes per minute.

Applications same as Type K Simplex. Presses two cakes simultaneously. Speeds up to 250 cakes per minute.

For large toilet or laundry soap cakes. Available in Simplex or Duplex Models, pressing one or two cakes per stroke.



For small toilet soap cakes (1½ oz. or less). Speeds up to 200 cakes per minute.

For toilet soap cakes of unusual shape, oval cakes, or cakes having highly convex faces, with or without side band. Speeds up to 100 cakes per minute.

For small toilet soap cakes with side band. Speeds up to 120 cakes per minute.

R. A. JONES & CO., INC.
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Cartoners — Case Packers — Soap Presses

man of D-12, said that copies of a method for measuring of sequestering power of soaps and synthetic detergents containing sequestering agents were sent to members Oct. 6, 1960. The method is similar to the standard proposed by the British Standards Institution A (OSC) 3929 (Dec. 29, 1959).

Replies received to date are in favor of investigating the procedure for possible adoption as an ASTM method. Samples for cooperative testing of the method will be distributed in the near future.

Milton J. Rosen, department of chemistry, Brooklyn College is chairman of a group studying estimation of nonionics. Prof. Rosen's greatest problem at this stage is said to be a dearth of samples of pure EO adducts.

Alkaline Detergent Specs

Subcommittee S-4, on Specifications for Inorganic Alkaline Detergents advanced to standard its specification 458-57-T for soda ash. W. Stericker of Philadelphia Quartz Co., S-4 chairman, proposed tentative specifications for sodium tripolyphosphate, which will be acted on this year. Text of the proposed specification follows:

Proposed Tentative Specifications for Sodium Triphosphate

Scope

1. These specifications cover materials suitable for use in various washing, cleaning and scouring processes, with or without soap or synthetic detergent, and/or with other builders, where a mildly alkaline material with sequestering properties is desired.

General Requirements

2. These specifications cover sodium triphosphate (sodium tripolyphosphate). This may be in either (A) granular or (B) powdered form, as specified by the purchaser.

Chemical Composition

3. Either form of sodium triphosphate ($Na_5P_3O_{10}$) as received shall conform to the following requirements as to chemical composition:

	Min.	Max.
Phosphate content as P_2O_5	56.0%	58.0%
Orthophosphate content as P_2O_5	—	1.0 or 2.0%
pH of a 1% solution	9.3	10.0
Ignition Loss	—	0.5%
Matter insoluble in water	—	0.1%

J. C. Harris
Chairman, Committee D-12

Temperature Rise

4. The temperature rise on dissolution of the powder (B) may be specified if so desired. Normally this would be 7.5° C. maximum.

Basis of Purchase

5. Sodium triphosphate shall be purchased by net weight.

Methods of Sampling and Analysis

6. The material shall be sampled and analyzed in accordance with the Tentative Methods of Sampling and Analysis of Sodium Triphosphate (A.S.T.M. Designation D 501-58T).

Subcommittee T-4 on Analysis of Inorganic Alkaline Detergents, M. V. Trexler (Westvaco) chairman, retained — with modifications — as tentative the methods for sampling and analysis of sodium triphosphate described in D 501-59-T.

Measuring Detergency

O. K. Moore of California Research Corp. is taking the place of J. L. Darragh who resigned as chairman of subcommittee T-5, Physical Testing. T-5 has 12 task groups working on various aspects of measuring detergency. Task group 10, Development of a Method for Evaluation of Detergents in Dishwashing, Robert Johnson of Whirlpool Corp., chairman, is circularizing manufacturers of dishwashers and detergents to know which methods are used by these industries. Spotting and filming are expected to be measurable criteria of performance. Whether or not differences in redeposition by different detergents will be measurable remains to be established.

A. M. Schwartz, chairman of task group 11, Primary Soil Deposition, reported that a bibliography on this subject is being kept up to date but plans do not call for its publication in the near future.

Task group 9, Methods for Determination of Cloud Points of Detergents, is circularizing detergent manufacturers to establish temperature limits within which any practical method must operate.

Definition of Terms

Subcommittee G-2, Nomenclature and Definitions, A. M. Schwartz, chairman, readopted as tentative D 459, Definitions of Terms Relating to Soaps and Other Detergents. Discussion on whether hydrophilic, hydrophobic, and lipophilic should be part of the glossary yielded the decision that the first two terms require definition but that hydrophobic and lipophilic are to be regarded as synonymous. The terms polar and non-polar, adopted by the terminology committee of the International Committee on Detergency, will not be incorporated in the glossary of D-12.

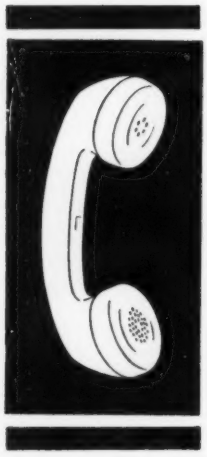
There was some controversy on the need to define the term "scouring cleanser." Since "scouring" is already defined, the committee decided against it. "Detergent alkylate" and "acid wash color" are to be defined. The terms "alkyl benzene sulfonate" and "fatty alkyl sulfate" will come up for scrutiny. Objections were raised from the floor to the indiscriminate use of the words sulfate and sulfonate. Mr. Schwartz said that this usage, right or wrong, had become part of the jargon of the trade and it was therefore up to Committee D-12 to follow the practice of the industry and define these words as they are used.

After the official meeting, Jay C. Harris gave an informal talk on the mechanism of soil removal. Mr. Harris worked with C_{14} tagged fatty soil on roughed glass. Among nonionics 10EO compounds effected best soil re-

(*Turn to Page* 150)

hurry . . hurry . . hurry . . a call to Arkla

Chemical starts a race with the calendar on normal deliveries . . a race with the clock on emergencies . . customer can't afford a disappointment . . it may mean a dollar-gulping silence in a paper mill for want of caustic or chlorine . . flow reduction in a refinery or wasted man-hours in a steel mill for want of caustic . . critical water problems for want of chlorine . . he'll not be disappointed with Arkla delivery . . we'll guarantee it . . hurry . . hurry . . normal deliveries days in advance . . emergencies with hours to spare . . customers are pried out of tight spots with a telephone . . if we haven't had the pleasure of beating your deadline with time to spare . . check what you need for fast reference . . . . then pick up the phone and call us at our Shreveport phone number 422-2141.



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soap plant observer

By Willis J. Beach,
Technical Service Department,
Sugar Beet Products Co.

BY modifying certain elements of materials handling one may increase production rates, eliminate sources of error and improve accuracy of ingredient proportioning. Some problems encountered in handling liquid materials will be discussed here.

Benefits derived by West Chemical Products, Inc., Long Island City, N. Y., from a new installation of Neptune stainless steel "Auto-Switch" meters were presented in the February issue of *Soap and Chemical Specialties*. These meters give semi-automatic, controlled measurement of liquid ingredients into a batch process, operating on the volumetric displacement principle.

We have found displacement meters useful for the introduction of predetermined quantities of fluids into a tank for batch making, and for telemetering fluid streams feeding into a continuous process for inventory control purposes. In these applications volume measuring meters do offer several advantages. However, their use also involves certain pitfalls.

Our first bout with meter trouble came when we were assigned a trouble shooting job in process control. The product involved was an emulsion gel. One of the specifications by quality control was *yield point*—a parameter used to insure that the gel would flow out of a can but not leak out of a dispenser. The quality control system in use was a modification of a range control chart described by Aldredge, Union Carbide Chem. Co. (*Chem. Eng.*, Jan. 1960). Day to day readings began to drift toward the lower control limit of the range chart showing that the average consistency of the product was getting softer and near the

danger line.

A review of the quality control data on raw materials showed no discrepancy. We began to suspect that the trouble was in processing, most likely in proportioning. The product in question was produced by the continuous blending of four liquid streams, each under independent flow control. There were at least fifteen combinations of high and low values of these four streams that could result in a thin product. As the situation worsened, analytical results from the laboratory indicated that the possible source of trouble might be narrowed down to two of the four streams; one a small stream controlled by a proportioning pump, the other a large stream regulated by a Kates regulator. The prime index of control of this latter stream was a predetermined reading in gallons per minute on a variable area flow meter. This reading was set by manual adjustment of the Kates regulator. This stream also had a meter equipped with a large round dial having both a rotating indicating needle, and a totalizing register for inventory purposes.

When the search was narrowed down to these two streams, the stream controlled by the proportioning pump was viewed with greater suspicion. There had been considerable trouble in the past handling this fluid by proportioning pump because of suspended solids. Much time was spent studying this stream. Finally, inventory computations pointed out that the large stream controlled by Kates regulator was in error on the side of high delivery. How could this be? Viscosity and temperature of this stream had not changed; with these factors constant, a variable area flow meter is a very reliable device. How could we be getting more of this liquid into process than was being measured? The possibility of a simultaneous drop in the fluid flow of the other three streams was quite unlikely. Very close supervision of operations was then set up.

We found that the operator was not relying on the variable area type flow meter because of ambient, small fluctuations in float level. The travel of the indicator needle on the volumetric displacement meter was being timed for one minute by stop watch and this gallon per minute flow figure was being used to adjust the Kates regulator. Both the displacement meter needle travel reading and the variable area meter float reading had been checked for accurate delivery and found in close agreement when the process had been given its shakedown tests shortly after installation. But this had been over two years ago!

A further test correlating needle travel with actual delivery by weight/time tests, showed that the meter's indicating system was *not* keeping up with actual delivery. Therefore, when needle travel gallons per minute readings were used as an index for flow con-

NEW STANDARD-KNAPP GLU-LINER

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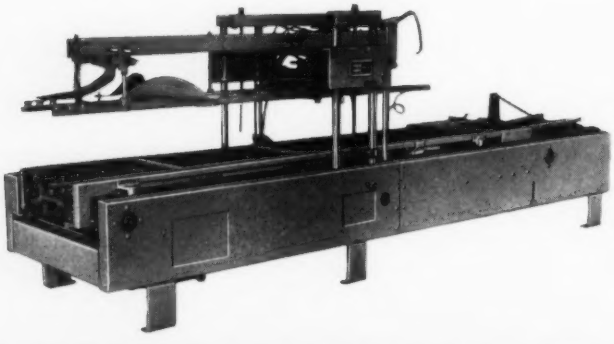

THIS NEW CASE GLUER reduces your adhesive costs by gluing in neat, quick-gripping stripes instead of wide, wasteful bands. Its air-tight, low pressure system of feeding assures uniform application which you can pre-set for heavy, medium or light. Also, you lose no glue to air-hardening.

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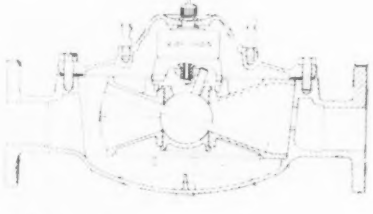
NO GLUE POTS to clean and fill; no rollers to scrape. Glue is stored in a reservoir. Floors stay cleaner. Make-ready and set-up time is reduced; production hours boosted. No shear pins — overload protection is electrical. Push a button and you restart in time. For case gluing as modern as your package, write for the details on the Glu-Liner to Emhart Manufacturing Company, Portland Division, Portland, Connecticut.

EMHART

trol, the stream was actually delivering more than the meter indicated. This error was due probably to wear in the gear system which transmits piston movement to needle travel. A wear plate was inserted in the meter and partially corrected the error. Further adjustment of the meter to increase its accuracy could only be accomplished by a change gear which, when inserted, would change the ratio by a small increment. The correct ratio had to be computed and the required gear ordered from the factory. The situation caused considerable delay and inconvenience.

We should hasten to mention that the troublesome meter was not a Neptune. The Neptune meters have certain features that provide convenience in calibration. The "200" and "400' series meters have a patented gear change shifter. The "100" series meters are still calibrated by change gears. The change gear shifter offers a simple, positive and accurate means of adjustment permitting quick calibration under actual operating conditions. To calibrate, the register cover is removed exposing a circular gearshift plate on which a number of change gears are mounted. There is a series of holes in the plate into which the guide pin enters at different settings. The shifter is simply lifted and revolved on its center spindle to the setting desired. Altering the setting one hole changes calibration about 0.15 per cent which is sufficiently small an increment to provide quite accurate indication. Further protection against gear wear is offered by Neptune. Their stainless steel meters are equipped with an oil enclosed gear train mounted to the external housing—out of range of any corrosive liquids being measured.

Figure 1.



So much for gear wear. How about wear on other moving parts? The Neptune meter features a nutating disc piston operation. This motion is hard to describe. The piston sort of wobbles as it rotates; i.e. the free end of an upright post at its center describes a circle as the disc rotates. The piston moves between inverted cones in the bottom and top of the chamber. Fig. 1. shows that the under side of the disc is in line contact with the lower cone on the right hand side, making an enclosed space under the left side of the disc. When the top half of the chamber is put on, there is another space like this under the top of the disc on the right side. These confined spaces rotate around as the disc nutates, filling with liquid through the port on one side and forcing liquid out through the port on the other side. The only moving part in the measuring chamber is the piston. At each cycle the piston discharges a volume of liquid equal to the capacity of the measuring chamber.

The volume displacement meter is on safer ground where it measures and delivers preset formula quantities of a liquid ingredient going into the tank batch. Maintenance problems due to spillage and to cleaning of small containers is avoided. Handling problems are simpler. Liquids flow through pipes quickly and directly to process, thus speeding up operations. Errors in weighing liquids and inaccurate gauge sticks are eliminated.

In the article mentioned above, the function of the Neptune "Auto-Switch" meters is briefly described. These meters are equipped with registers that actuate an electric switch after delivering a preselected quantity. With this unit, you can start or stop pumps or agitators, actuate valves or perform any other functions in the process cycle in addition to measuring quantities of liquids.

Control of fluid flow by meter is not the only way of speeding up operations and improving liquid handling and dispensing problems. It is not always desirable to measure formula quantities by volume. However, a volume displacement meter can be calibrated to deliver in weight units, provided the specific gravity of the liquid remains constant. There are advantages in weighing liquids directly into the batch tank. Innovations in weighing tanks will be discussed next month.

—★—

New Marking Machine

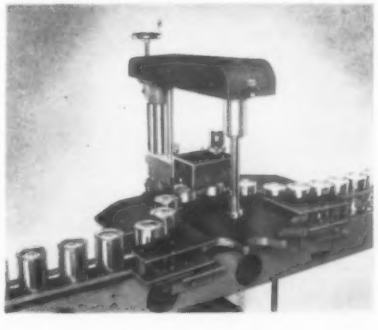
A new machine for imprinting prices, codes, etc. automatically on the tops of cans, jars and bottles has just been announced by Adolph Gottscho, Inc., Hillside, N. J.

Designed to overhang a conveyor line, the new model TT "Markcoder" machine operates at speeds of up to 600 units per minute. It does not require cutting the line or using dead plates. Imprints are spotted in the same location on each succeeding product regardless of whether the flow is constant or irregular. The unit automatically compensates for slight variations in product height, and imprints surfaces recessed as much as five eighths of an inch.

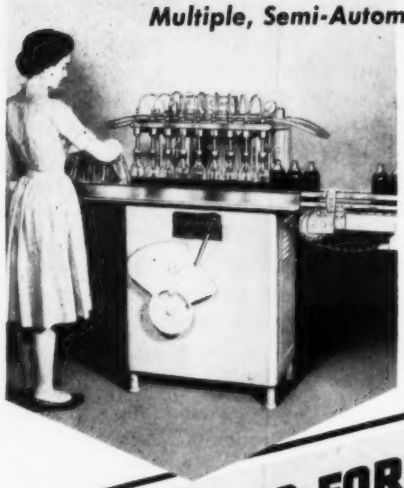
A variation of the basic model also applies an imprint to the bottom of the container at the same time it is imprinted on the top.

Bulletin TT describing the new imprinter is available from Adolph Gottscho, Inc., Hillside 5, N. J.

New "Markcoder" by Gottscho, Inc., imprints automatically, cans, jars, bottles.



Multiple, Semi-Automatic Filler



MODEL B-49
STRAIGHTLINE
VACUUM FILLER
Fills 4 to 9 containers simultaneously. Lever engages and disengages filling stems, otherwise operation is automatic. Adjustable for container heights up to 14". Stainless steel construction; plastic available. Discharge conveyor optional. Write for "Bulletin B-49."

LOOK TO U.S. FOR EVERY LIQUID FILLING NEED!

US PACKAGING ENGINEERS

- *Fully Automatic*
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- *Hand Fillers*

YOU CAN spark your entire packaging operation with the right filler. Anything short of that can snarl your packaging pace. With a half century of experience in liquid filling, our engineers can specify filling procedure that will head your packaging operation most economically. Our recommendations will not obligate you. Please send sample of product, a dozen containers of each size to be filled and advise desired filling rate per minute, hour or day. Address our home office.

Steady Filling

MODEL B-2 VACUUM FILLER. Fills 2 containers while 2 filled containers are being removed and 2 empties loaded. Thus, filling is continuous. Handles containers up to 4½" dia., up to 13" high. Stainless steel construction. Plastic available. Portable. Filling is fast, efficient. Write for "Bulletin B-2."

For All Liquids All Containers

Also for foamy products that do not permit agitation. Stainless steel filling tubes. Fill controlled automatically. Glass lined tank. No power required. Product supply regulated. Write for "Siphon Bulletin."

Hand Filler. A precision unit of high quality for efficient filling. Write for "Hand Filler Bulletin."

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new patents

Listed below are brief abstracts of recently issued patents. Complete copies may be obtained from the publisher of this magazine: — MacNair-Dorland Co., 254 W. 31st Street, New York 1, N. Y. Remit 50¢ for each copy. For orders received from outside of the United States send $1.00 per copy.

No. 2,969,329. Detergent Compositions, patented by Samuel Allen Heininger, Dayton, assignor to Monsanto Chemical Co., St. Louis, Mo. A detergent composition is patented consisting essentially of a synthetic, organic detergent selected from the group consisting of the sulfated and sulfonated anionic and non-ionic detergents, and in combination therewith a small amount of benzazimidol sufficient to inhibit tarnishing of a copper base alloy.

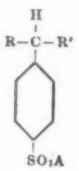
No. 2,970,963. Opaque Liquid Detergent Composition, patented by Richard D. Walker and Joseph Blinka, assignors to Procter & Gamble Co., Cincinnati. An opaque liquid detergent composition is described consisting essentially of an aqueous vehicle containing in solution about 15% to about 40% of a water soluble anionic non-soap synthetic detergent sodium salt, said detergent salt comprising in part an amount of sodium alkyl glyceryl ether sulfonate with alkyl radicals ranging in chain length from C_{12} to C_{14} equivalent to at least 2% by weight of the composition, and suspended therein as a crystalline opacifying agent about 1% to about 9% of an alkyl glyceryl ether sulfonate sodium salt with alkyl radicals ranging in chain length from C_{16} to C_{18} and which is substantially insoluble in the composition at room temperature, said aqueous vehicle containing in solution from about 2% to about 20% sodium nitrate sufficient to provide a graining action for said opacifying agent thereby reducing the viscosity of said composition and sufficient to increase the specific gravity of said aqueous vehicle whereby the stability of said opacifying agent against gravitational separation is increased, said percentages being by weight of the composition.

No. 2,970,962. Novel Detergent Compositions, patented by Henry B. Hass, Summit, N. J., and Foster D. Snell, New York, and Lloyd I. Osipow, Monsey, N. Y., and William C. York, deceased, late of Westbury, N. Y., by Ruth M. York, administratrix, Mineola, N. Y., assignors to Sugar Research Foundation, Inc., New York. A heavy-duty detergent composition is patented consisting essentially of from about 10 to 40% by weight of a surface active component comprising a fatty-acid ester selected from the class consisting of a monoester of sucrose and raffinose and a fatty-acid containing between 6 and 30 carbon atoms and as a detergent aid from about 10 to 90% by weight of an alkali-metal salt of a molecularly-dehydrated phosphoric acid.

No. 2,971,882. Dimethyl-1,2-Dibromo-2,2-Dichloro-Ethyl Phosphate and its Application as a Multifunctional Pesticide, patented by Joseph Nils Ospenson, Concord, and Gustave K. Kohn, Oakland, Calif., assignors to California Research Corp., San Francisco. Claimed is the preparation of dimethyl-1,2-dibromo-2,2-dichloroethyl phosphate which comprises reacting dimethyl-2,2-dichlorovinyl phosphate with bromine in the presence of an inert aliphatic solvent and under photochemical catalysis while maintaining a free bromine content in the reaction mixture less than about 4% by weight and a temperature in the range of 0°-30° C., thereafter stripping the volatiles from the reaction system and recovering a low viscosity product which crystallizes to a white crystalline solid.

A method of destroying pests is taught which comprises contacting said pests with dimethyl-1,2-dibromo-2,2-dichloroethyl phosphate.

No. 2,972,583. Detergent Cake and Method of Making Same, patented by Gordon Trent Hewitt, Great Notch, N. J., assignor to Colgate-Palmolive Co., New York. Disclosed is a substantially wax-free homogenous detergent cake consisting essentially of 50-95% of normally solid water soluble non-soap noncationic organic detergent material including 10-95% of the cake weight of at least one material having the formula



wherein R is a normal saturated alkyl radical, R' is a member of the group consisting of hydrogen and methyl, the sum of the carbon atoms of R and R' being 7-17, and A is a salt-forming cation, and 5-25% of an organic plasticizer selected from the group consisting of the normally solid polyethylene glycols and compounds possesing aliphatic groups of about 12-18 carbon atoms, said latter compounds having hydrophilic and lipophilic groups so as to be emulsifiable in washing solutions, the sum of the organic detergent material and plasticizer being at least 75% of the cake weight.

No. 2,970,964. Opaque Liquid Detergent Composition, patented by William C. Krumrei, Springdale, and Joseph Blinka, Cincinnati, O., assignors to Procter & Gamble Co., Cincinnati. This patent claims as an opaque liquid detergent composition an aqueous vehicle containing in solution about 5% to about 25% by weight of a water soluble anionic nonsoap synthetic detergent salt and suspended therein about 0.5% to 10% by weight of a crystalline opacifying agent selected from the group consisting of sodium and potassium salts of an alkyl glyceryl ether sulfonate with alkyl radicals ranging in chain length from C_{16} to C_{18} and which is substantially insoluble in the composition at room temperature.

No. 2,971,883. Method and Composition for Preventing the Growth of Microorganisms on Surfaces, patented by Theodore C. Swinyar, Benton, Ark. (Collegedale Medical Center, Collegedale, Tenn.) This patent teaches a method of protecting the walls of X-ray photo development of microorganisms on the tank walls which consists in coating the surface of the tank walls with a substantially saturated solution of 2,4,5 trichlorophenol in a solution of paraffin in benzene, the evaporation of the benzene producing a viscous coating consisting of an intimate mixture of the trichlorophenol with the paraffin, the microorganisms repelling and destroying and water-insoluble trichlorophenol being thus held on the wall of the tank during a succession of film development, fixing and watering operations carried out within the tank during a protracted period of time, the relative proportions of said coating solution being, for each 100 cc. of benzene, about 4.5 grams of paraffin and about 50 grams of 2,4,5 trichlorophenol.

No. 2,970,940. Synergistic Insecticidal Compositions, patented by Howard A. Jones and Berton C. Dickinson, Lydonville, N. Y. assignors to Food Machinery and Chemical Corp., New York. Described is a method of killing insects which comprises applying to the insects and their habitat synergistic insecticidal compositions comprising 0,0-dimethyl S-(1, 2- dicarbethoxyethyl) dithiophosphate and phenyl N-methyl-N-phenylcarbamate, said components being employed in the ratio of about 2 parts of said carbamate ester to about 1 part of said dithiophosphate.

(*From Page* 143)

moval at cloud point temperatures. Among anionics branch chained C_{15} compounds performed best.

In no instance was complete stripping of the surface accomplished, a monolayer remaining at all times. Addition of sodium tripolyphosphate facilitates soil removal by a protective action which prevents both primary and redeposition. Adsorption on the glass of sodium tripolyphosphate can be demonstrated.

Pretreatment of the substrate (acid or alkaline) influences detergent performance. Critical micelle concentration is not the point of optimum detergency but the threshhold of detergency. The optimum is determined by c.m.c. combined with other factors. Mr. Harris proposed an equation correlating c.m.c., solubilization, and soil removal.

Two of the formal papers presented at the meeting appear in full elsewhere in this issue: "Foam Measurement by a Dynamic Method," by Henry E. Reich, John T. Patton, and C. V. Francis of Wyandotte Chemicals Corp. and "Photometric Measurement of Filming and Water Spotting in Dishwashing," by A. L. Kimmel and H. M. Gadberry of Midwest Research Institute, Kansas City, and D. O. Darby, formerly of General Electric Co., now with Economics Laboratory, Inc., St. Paul, Minn. A third presentation entitled "Low Foam Nonionic Surfactants," by J. Dupre, R. E. Wolfrom, and D. B. Fordyce of Rohm & Haas Co., appeared in *Soap and Chemical Specialties*, Feb. and March, 1960.

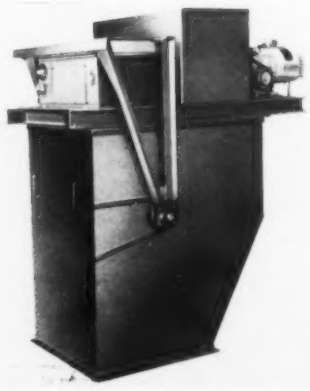
—★—

New Batching Scale

Accuracy and speed in the large scale weighing of fine, dry aggregates and dusts are claimed for a new batching scale developed by Thayer Scale Corp., Pembroke, Mass. Capable of handling 40 tons of dust per hour at an accuracy of plus or minus one tenth of a per cent, the "B18R" unit consists of a rotary feeder and "Thayer Flexure-Plate" scale which supports a tipping weigh bucket.

The installation features two feeder grates—one bulk, one dribble—for high accuracy. Provisions are made for manual or automatic operation of the dump cycle and a predetermined counter permits automatic filling and discharging of a predetermined number of charges.

Batching Scale by Thayer



HERE'S A MIXER THAT GUARANTEES A CONSTANT UNIFORM MIX.

The MARION MIXER mixes to Laboratory uniformity . . . Consistently through its Exclusive Mixing and Blending Action.

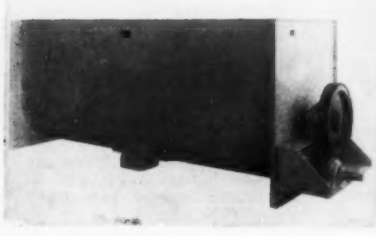
THE Marion MIXER

UNIFORMLY MIXES:

- SOAPS and DETERGENTS
- SWEEPING COMPOUNDS
- PHARMACEUTICALS
- INSECTICIDES
- DRY AND SEMI-WET CHEMICAL POWDERS
- DRY AND SEMI-WET AGRICULTURAL CHEMICALS

The Marion Mixer is engineered for precision mixing and turns out TOP QUALITY mixed products for chemical manufacturers everywhere. The Marion Mixer is recommended for mixing the Lightest or Heaviest Materials. Its simple, efficient design is rugged enough to handle any volume of mixing large or small . . . and at the same time, it constantly safe-guards your formula mixes from loss of uniformity. Laboratory tests have proven that even trace materials can be blended into the most complicated industrial chemical formulas, and pass individual analysis tests for the most even batch distribution possible.

When replacing worn-out Mixers — Expanding your Mixing Operations — Adding new mixed products to your line, it will pay you to investigate the distinct advantages of the Marion Mixer. There is a Marion Mixer for any Chemical Mixing Operation.



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products and processes

Cleaning Compound

A cleaning composition is suggested containing the following ingredients:

Rosemary oil	10 grams
Bergamot oil	5 grams
Methanol	100 cc.
Glycerine	200 cc.
Fatty alcohol	300 grams
Fatty alcohol, sulfonated	70 grams
Butyl acetate	150 cc.
Camphor	60 grams
Water	150 cc.

French patent 1,190,447, through *Glycerine News*, Jan. 1961.

—★—

Two Foot Care Aerosols

An aerosol foot spray may be formulated from the following components:

	grams
Undecylenic acid monoethanolamine (UMA)	0.05
Deodorant	0.25
Dipropylene glycol	8.00
Recryst. pure menthol	0.04
Perfume oil	0.10
Isopropyl myristinate	1.79
Isopropyl alcohol	10.00
Propellants 11/12, 50:50	80.00
	100.00

A pressure packaged foot powder is composed as follows:

	grams
Deodorant	0.50
Zinc undecylenate	10.00
Polyethylene glycol	1.00
Boric acid	5.00
Perfume oil	0.50
Finest talcum powder	83.00
	100.00
Aerosol mixture:	
Above concentrate	10.00
Propellants 11/12, 55:35	90.00

Dragoco Report, No. 2, 1961, published by Dragoco, Gerberding & Co., Holzminden, Germany.

—★—

New Versatile Resin

A new resin suitable for use as a leveling agent in dry bright polishes has been introduced by Hercules Powder Co., Wilmington, Del. Designated "Pentalyn 255" the material is soluble in alcohol and aqueous ammonia and exhibits compatibility range including polystyrene, acrylic, PVA, polyethylene and copolymer emulsions, according to Hercules.

"Pentalyn 255" is claimed to be an economical leveling agent, imparting clarity, gloss and brilliance to the film.

—★—

Enzymes for Cleaning

Improved cleaning formulations for household and industrial applications may result from use of commercial enzymes obtained by a new process announced last month by Western Biochemical Corp., 755 Sansome Street, San Francisco.

The enzymes amylase, protease, and lipase are derived from the culture of selected strains of *Bacillus subtilis*. The purification process is the subject of U. S. and Japanese patent applications. Exclusive manufacturing rights to the process are held by Pacific Laboratories, Inc., in Honolulu. Western Biochemical is their exclusive sales agent.

The process is said to yield low cost volume production of enzymes of high potency, purity and stability.

—★—

Liquid Leak Detector

A new liquid leak detector for use on pressurized gas or air lines has just been introduced by Nuclear Products Co., Cleveland. Tradenamed "Snoop", the product comes in an eight ounce polyethylene squeeze bottle with a one-eighth inch "Snooper" tube which is adjustable from one half inch to 12 inches for inaccessible areas.

A thin, solid stream of "Snoop" is applied to each test location. Bubbles form immediately if a leak is present. The solid stream method of dispensing avoids misleading bubble formation from spraying. Long bubble life is another feature claimed for the detector.

Hard Water Soaps

Certain alkylcarbamylalkane sulfonates are suggested as additives for hard water soaps. Scum formation and visible lime soap deposits are said to be minimized or eliminated by such combination products. British patent 834,225; Unilever, Ltd., Port Sunlight, England.

—★—

Metal Polish

A cleaning and polishing compound for metals, particularly silver and copper may contain the following ingredients: A viscous polyol, such as glycerine, 25 to 80 per cent; an acid such as oxalic, tartaric, malic, or citric, 20 per cent; thiocarbamide, one to 10 per cent; and precipitated barium sulfate as an abrasive. *Glycerine News;* Jan. 1961.

—★—

Antimicrobials Data Sheet

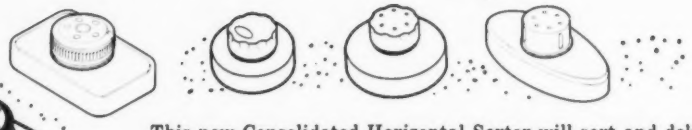
"Vancides"—Properties and Uses is the title of a new six page bulletin just issued by R. T. Vanderbilt Co., 230 Park Avenue, New York 17. Soaps, detergents, and household chemical specialties are among the most important applications of "Vancide" bactericides and fungicides. The series includes phenolic disinfectants and antiseptics suitable for incorporation in cosmetics, soaps and household chemical specialties; TMTD (tetramethylthiuram disulfide), suggested for cosmetics, soaps, and agricultural applications; sodium dimethyldithiocarbamate and sodium 2-mercaptobenzothiazole for agricultural, textile, and other industrial uses; a purified captan for cosmetics, soaps, household chemical specialties and industrial purposes; and finally a quaternary for household and industrial formulations.

The bulletin contains a table listing solubility, pH area of stability, toxicity, chemical composition, literature available and uses for each "Vancide."

Can breasts leave the new Consolidated Horizontal Sorter properly positioned and ready to be fed into a capping machine. Unit includes supply hopper that feeds can breasts to capper.

NOW!

SORT AND DELIVER CAN BREASTS TO CAPPER *automatically*



This new Consolidated Horizontal Sorter will sort and deliver can breasts to an automatic Capem Capping Machine at rates up to 175 per minute! It cuts your unit production costs — and keeps marring of enamel finishes to a minimum.

Square, oval, rectangular or round breasts — the new Consolidated Horizontal Sorter handles them all . . . automatically. Also available is a Consolidated Belt Sorter for handling tapered plastic jigger caps as well as tapered plastic fitments. For high speed sorting, choose the Consolidated Cage Sorter.

Let us help you figure just how fast one of these new machines will pay for itself through savings in your own packaging operations.

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PROCESSING TANKS

STAINLESS • MONEL • NICKEL

- LOW COST
- CORROSION RESISTANT
- SANITARY

All Terriss tanks are made in standard sizes with cover and flush type sanitary outlet valve. The metal is polished inside and outside with welds ground and polished. Tanks are pitched bottom and self-draining with radius corners for easy cleaning. Tanks can be fitted with Terriss Quick-Mix Agitators. Jacketed tanks are also available to specification.

Write for free tank bulletin

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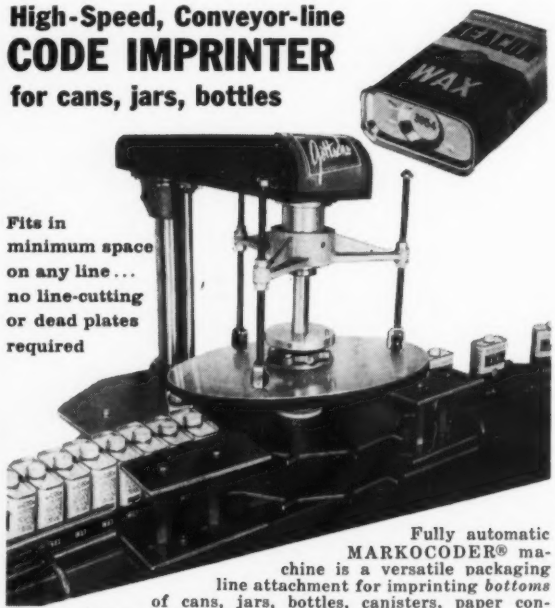
High-Speed, Conveyor-line

CODE IMPRINTER

for cans, jars, bottles



Fits in minimum space on any line . . . no line-cutting or dead plates required

Fully automatic MARKOCODER® machine is a versatile packaging line attachment for imprinting *bottoms* of cans, jars, bottles, canisters, paper containers at speeds up to 600 per minute. Keeps products flowing smoothly. Makes consistently clean imprints from rubber type and fast drying fluid ink. Designed for quick code changes, simple maintenance, easy adjustment for different size containers. Install it yourself in a few hours.

Write today for Bulletin "TB"

First and foremost in automatic production-line CODING, MARKING and IMPRINTING machines — Gottscho®

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book reviews

USDA Insecticide Handbook

"Insecticide Recommendations of the Entomology Research Division for the Control of Insects Attacking Crops and Livestock for 1961" is the title of Agriculture Handbook No. 120, just issued by the Agricultural Research Service of the U. S. Department of Agriculture. This handbook has been published annually since 1957.

Recommendations are intended as a guide for entomologists, for research and extension workers, and for various agricultural associations and agencies rather than for individual users, USDA stresses. Several new insecticides are covered and more efficient dosages of some previously recommended materials are suggested. Precautions to be followed by insecticide users have been slightly amplified, necessity for following label instructions is stressed.

Single copies of the handbook may be obtained for 65 cents from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

—★—

Food Additives Directory

"Food and Color Additives Directory" is the name of a new service initiated jointly by Information for Industry, Inc., 1000 Connecticut Avenue, N.W., Washington 6, D. C., and Hazleton Laboratories, Inc., Falls Church, Va. The service, which was launched at the end of last month, covers legislation and regulations issued under the Food Additives Amendment of 1958 and the Color Additives Amendment of 1960. The guide consists of five volumes containing an estimated 7000 *Federal Register* references plus pertinent information on official actions concerning food and color additives. Direct, and indirect additives are covered.

The directory is intended as a reference service embracing all food and color additives which have received official recognition. Subscription prices are $150 for each initial directory set of five volumes, and $150 a year for the monthly revision service. The initial five volumes consist of approximately 4000 loose leaf pages covering actions between Sept. 1958 and Jan. 31, 1961.

—★—

Year 'Round Weed Control

A new 'round the calendar weed control program for industry is suggested and described in an illustrated booklet available from Geigy Agricultural Chemicals Division of Geigy Chemical Corp., Saw Mill River Road, Ardsley, N. Y. The brochure covers Geigy's "Simazine" pre-emergence herbicides for application in late fall to early spring and "Atrazine" pre- and post-emergence herbicides for application in early spring through early summer.

Both types come as wettable powders and as granules. Their chemical compositions, applications and herbicidal spectra are discussed in detail. Economy, low human and animal toxity, safety to equipment and to soil micro organisms, are among the features claimed for these products.

—★—

Data on Antimicrobials

A 16 page brochure describing "Preventol GD" and "Preventol GDC" fungicidal and bactericidal agents is now available from Antara Chemicals, a division of General Aniline & Film Corp., 435 Hudson Street, New York 14.

Both antimicrobials are used in the processing and preservation of textiles, organic liquids and pastes, cutting fluids, and other products. They are claimed to be nonvolatile, chemically stable, and nonirritating.

Safety Training Course

"Safety and production are two sides of the same coin," according to the first booklet of a six part training series developed by the National Safety Council and authored by Glenn Griffin of the University of Michigan's Bureau of Industrial Relations.

Entitled "Men and Motives in Safety Supervision" the six text booklets are aimed at the industrial foreman. In addition the course comprises a manual for discussion group leaders, telling how to set up meetings and apply the material to individual plant situations.

The first booklet, entitled "People Cause Accidents" opens with a quote by Alfred P. Sloan, Jr., asserting that "The focal point of industrial safety is the relationship existing between the employee and his foreman . . . "

For information on the training course contact the National Safety Council at 425 N. Michigan Avenue, Chicago 11.

—★—

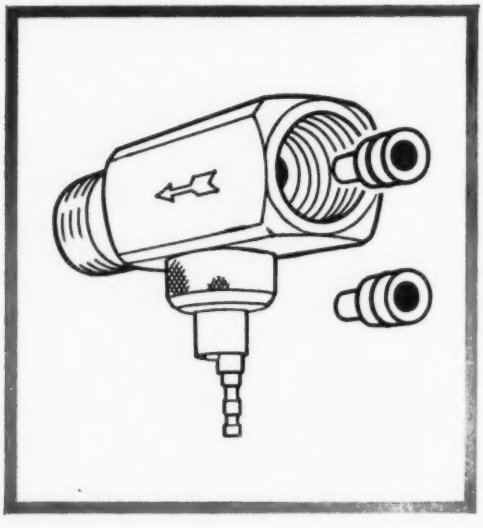
New Mixer Bulletin

The complete line of Day "Cincinnatus" mixers is the subject of an eight page bulletin just published by J. H. Day Co., Cincinnati, division of Cleveland Automatic Machine Co. "Cincinnatus" mixers – light, medium and heavy duty–are double arm mixers designed for the processing of viscous fluids and semi-solids. Detailed information on construction features and available types of agitators is given in the bulletin. These mixers are built in tilting types, ranging from five gallon to 200 gallon working capacities, and in non-tilting types ranging in working capacities from 20 to 1000 gallons. A free copy of the bulletin may be obtained by writing J. H. Day Co., 4932 Beach St., Cincinnati 12, Ohio.

MEET A NEAT LITTLE NUMBER... MODEL #224

Quick . . . jot it down in your little blue book. New Dema-designed rinse injector wants to be a friend of every dish washing machine, and a big bit more.

MODEL #224 plays no favorites . . . exclusive 2 interchangeable water nozzles match the injector to the machine regardless of water flow and pressure, permitting installation on all dishwashing machines, single tank, rack type conveyor, conveyor type.



A breeze to install . . . anywhere along the final rinse line . . . requires no costly electrical wiring, special fittings or alignments. #224 is exact . . . injects rinse additive in perfect proportion to rinse water flow. Flow meter clearly indicates rate of injection. As for operation . . . #224 "accentuates the positive" . . . injection rates adjust to high or low water flow. A set of two hand interchangeable water nozzles further insures optimum operation . . . by matching the injector capacity to the individual machine. Now, note these added features . . . further guarantees of economy and time-saving operation:

- Rinse additive can be replaced while machine is in operation.
- Bottle holder adjusts to sizes up to one quart.
- Easy-to-clean strainer screen prevents clogging.
- Construction is completely corrosion-resistant . . . with no breakable, moving parts.

Come, let Dema introduce you to this wonderful new friend . . . Model #224. Why not today?

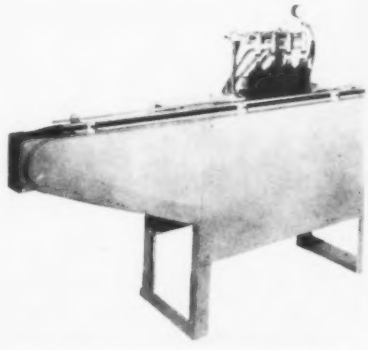
DEMA ENGINEERING COMPANY

Designers and Manufacturers of Automatic Dispensing Devices

10020 Big Bend Blvd., St. Louis 22, Mo.

New Filler from Scientific

Scientific · Filter Co., New York, recently introduced its Model "C" filler, designed especially for small containers. All mechanical movements of the new unit are controlled from a single station from which parts are said to be easily accessible. Spouts are mounted in a slotted head assembly which provides lateral as well as forward adjustment to suit all types of containers. Two set screws allow for vertical height adjustment. Empty containers are placed on the conveyor after which they are automatically indexed into and out of the filling station. Filling time as well as conveyor speed are both adjustable. This is claimed to insure maximum output of varying types of containers and liquids. Simplicity of design is said to reduce maintenance requirements on model "C".



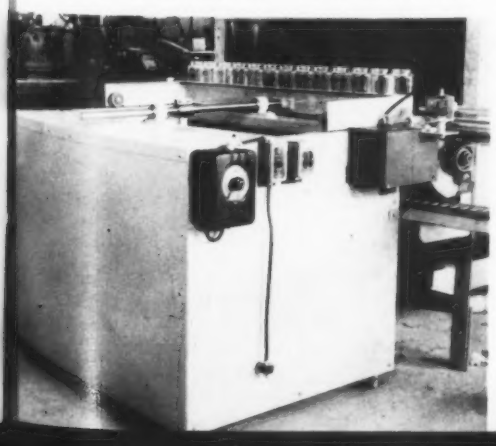
Model "C" automatic vacuum filler by Scientific Filter Co., New York.

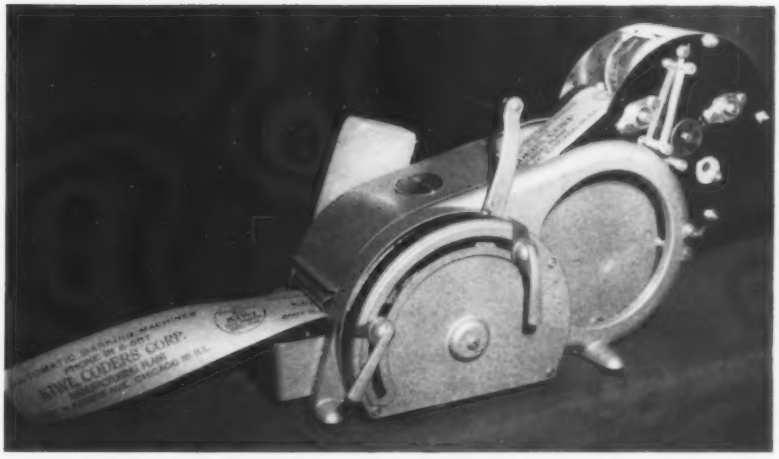
—★—

Broad Belt Infeed Unit

A new infeed unit has been added to the line of conveyors and other packaging equipment offered by Island Equipment Corp., P. O. Box 38-276, Miami, Fla. The new "Select-O-Count" features a manual setting indicator to determine the number of units to be counted. The units are then automatically counted, pushed off at right angle to a broad belt unit such as a pasteurizer, cooler, storage conveyor, etc.

"Select-O-Count" comes with pusher arm widths of 36 x 48, and 60 inches. Other specifications are available on special order.





"Kiwi" Coders Corp., Chicago, has announced the production of a new model tape marking attachment for "Kraft" gummed tape. The machine is said to have greater ink capacity, and is equipped with running parts mounted on ball bearings.

—★—

New Stainless Steel Sink

Terriss-Consolidated Industries, New York, recently made available a stainless steel laboratory sink, fabricated to comply with sanitary specifications. The radius cornered unit is of 18 gauge mirror polished stainless, 54 inches long, 25 inches deep and 36 inches high, with adjustable legs. It is equipped with pull-out spray hose and single handle water mixer faucet pouring into a single bowl, 20 by 18 inches by 7½ inches deep. Also featured are pull-out drawers with side and center closets.

—★—

New Onyx Catalogue

Onyx Chemical Corp., 190 Warren St., Jersey City 2, N. J., recently announced the availability of a new catalogue listing its most recent line of products. These products, divided into four classifications, are listed along with their chemical and physical descriptions, with specific applications and general use suggestions included.

New Spray Nozzle

Spraying Systems Co., Bellwood, Ill., recently introduced a new automatic hydraulic spray nozzle, 8651-1/4JAUH, with a clean-out needle that automatically clears the orifice with each on-and-off cycle of the nozzle. Each time the valve closes, the clean-out needle moves through the orifice opening to clear out any solid residue that might adhere. Compressed air is used to actuate the valve, which can be set at any speed up to 180 cycles per minute. The new nozzles are supplied in a choice of interchangeable tips.

- **Prompt shipments from warehouse stocks**
- **Advanced plant design assures high quality**
- **Personal service and flexibility our credo**

Write for Specifications and Samples

INDUSTRIAL BIOCHEMICALS, INC.
Edison Industrial Center • U. S. Highway No. 1 • Edison, N. J.

IBI

News...

PEOPLE · PRODUCTS · PLANTS

Lever Earnings Off in 1960

* * *

Texize Expands Plant

* * *

Bryan to 20 Mule Team

* * *

Armour Reorganizes Dept.

C. J. Gutman was recently appointed sales manager of the newly created "Kings Men" division of Helene Curtis Industries, Inc., Chicago. Since 1956 sales and marketing direction of "Kings Men" had been combined with that of "Lentheric" toiletries in a joint division known as Lentheric-Kings Men. The new "Kings Men" division, under the direction of Mr. Gutman, who was formerly with Gillette Co., Boston, is now in the process of marketing a newly packaged "everyday" line.

Let's look at your cosmetic aerosol fragrance problem from every angle!

In custom-creating a fragrance for your cosmetic aerosol, Givaudan examines your problem from *every* angle—perfume efficacy and consumer acceptability... types of propellents... pressure... solubility... compatibility... container material... cost and other factors.

Our staff is equipped with the skill, knowledge and specialized facilities to study such problems scientifically. Thus we can supply you with a fragrance that is not only technically correct from every viewpoint but uniquely and specifically *yours*. May we work for you—with you—to give your cosmetic aerosols exactly the right fragrance appeal?

GIVAUDAN-DELAWANNA, INC.
321 West 44th Street, New York 36, N. Y.

NEWS

Gutman Sales Manager

Appointment of C. J. Gutman as sales manager of the newly created "Kings Men" division of Helene Curtis Industries, Inc., Chicago, was announced recently. Since 1956 sales and marketing direction of "Kings Men" had been combined with that of "Lentheric" toiletries, in a joint division known as Lentheric-Kings Men. Separate divisions were formed in January with William C. Bailey continuing as sales manager of the "Lentheric" division.

The "Kings Men" division, under the direction of Mr. Gutman, who was formerly with Gillette Co., Boston, is now in the process of marketing a newly packaged "everyday" line.

—★—

Drew Stock Acquired

Lehman Brothers, New York investment banking firm, recently acquired all the outstanding common stock of E. F. Drew & Co., New York, for an undisclosed price, it was reported.

According to an announcement by D. Coape-Arnold, executive vice-presiden tof the firm, the shares were obtained from E. F. Drew, the founder. Mr. Drew has retired as a director and chief executive officer, and a new board will be elected, Mr. Coape-Arnold stated.

—★—

Newman Lehn & Fink V.P.

James W. Newman was recently appointed to the newly created position of vice-president of planning and finance, Lehn & Fink Products Corp., New York. Mr. Newman, formerly secretary and treasurer of the corporation, is responsible for long range corporate and inter-departmental planning, and for the firm's financial policies and plans. He joined the company in 1926 and has served in various executive positions throughout the country. Mr. Newman has been a director of the company since 1947.

James W. Newman

It was also announced that James W. Fay, formerly assistant treasurer, was elected treasurer; and Frederick Moeller, formerly assistant secretary, was elected secretary of the corporation.

—★—

Diversey Income Drops

Net income for the Diversey Corp., Chicago and its U. S., Canadian and foreign subsidiaries dropped to $516,929 in 1960, from $655,467 for the previous year. Sales increased to $17,798,290 in 1960 from $16,717,248 in 1959. Earnings per share dropped to 98 cents, as compared with $1.24 in 1959.

—★—

Texize Expands Plant

Construction of a 34,000 square foot addition to its present facilities was announced recently by Texize Chemicals, Inc., Greenville, S. C. Construction work is scheduled for completion by April 18, with production slated for mid-May. The one story addition of brick, concrete and steel, with a 6,000 square foot mezzanine, is located at the southwest side of the plant.

Purex Ltd. Appoints Two

Purex Corp., Ltd., Toronto, recently appointed R. G. Fairbanks marketing director, and L. J. Lahey, national sales manager. Mr. Fairbanks will head all phases of Canadian operations with the exception of manufacturing.

Mr. Lahey, formerly assistant sales manager, served as Purex retail representative, supervisor, assistant divisional manager and divisional manager in various areas of the United States, prior to being transferred to Canada.

—★—

Fels Fund Grant to Temple

The Samuel S. Fels Fund recently announced a grant of $400,000 toward a medical research building at Temple University, Philadelphia. The money is earmarked for facilities of the Fels Research Institute to be housed in the $4,500,000 building.

The institute and fund are named after the late Samuel S. Fels, philanthropist and head of Fels & Co., Philadelphia soap and detergent manufacturer. The institute was founded in 1933.

—★—

New Harrison Rep.

A. S. Harrison Co., South Norwalk, Conn., recently announced the appointment of Mattlage Sales, Inc., Brooklyn, as its representative to the food industry in the greater metropolitan New York area. Harrison makes "Preen" floor and household products for home and industry.

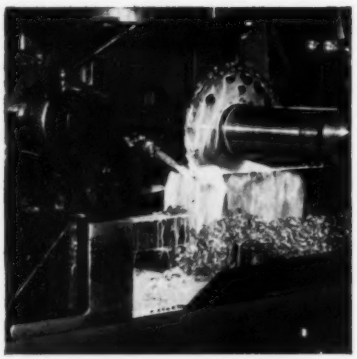
—★—

Bryan to 20 Mule Team

Appointment of W. B. Bryan as advertising manager of the 20 Mule Team Products department of United States Borax & Chemical Corp., Los Angeles, was announced recently by D. V. Parker, vice-president in charge of the firm's consumer products department.

From the
Witco Group

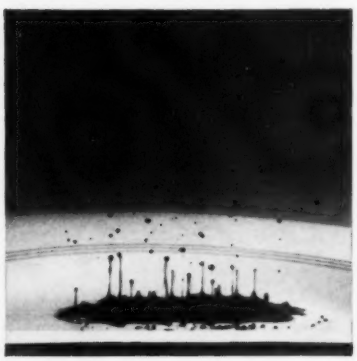
the broadest line of anionic surface-active agents in America



Sonneborn Chemical and Refining Corporation

Petroleum Sulfonates

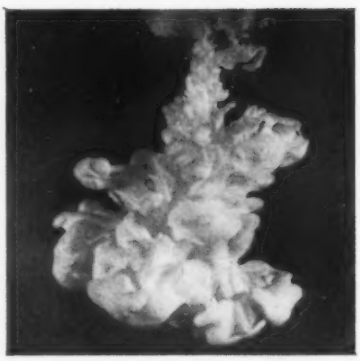
Petronates®: a full line of oil- and water-soluble surfactants whose properties as wetting, dispersing and emulsifying agents and rust inhibitors give them wide use as lube oil, fuel oil and gasoline additives, and in manufacturing such products as drilling muds, dry cleaning soaps, cutting oils, metal degreasers, rust preventives and textile and leather processing oils. Available as sodium, calcium, barium, magnesium and ashless salts. Other Surfactants: Oxidized hydrocarbons for use as rust preventives and emulsifiers.



Ultra Chemical Works

Alkyl Aryl Sulfonates

Sulframins®: basic surface-active agents for the manufacture of detergents and cleaning compounds for industrial, institutional and domestic use...and for a variety of other industrial applications such as air-entraining agents for concrete and for gypsum wallboard. Other Surfactants: Hydrotropes—xylene and toluene sulfonates for use as solubilizing and coupling agents; Ultrapoles®—conventional alkanolamine condensates and superamides; Neopones®—nonionics for various detergent tasks.



Organic Chemicals Division

Oil Soluble Salts of Dodecylbenzene Sulfonic Acid

Emcols: emulsifiers for oil/water and water/oil systems; wetting agents; detergents for hydrocarbon solvent systems; salt tolerant anionics for emulsifying solvents in high salt content aqueous solutions. Other Surfactants: fatty-acid esters, quaternary ammonium compounds, fatty-acid amides; alkanolamine condensates for such products as shampoos, lotions, creams and other cosmetics, specialty cleaning compounds, industrial emulsifiers, and industrial processing.

The organizations whose products are listed above are all subsidiaries and divisions of Witco Chemical Company, Inc. Together they represent sources for a unique range of surface-active products for industrial, agricultural and domestic applications. Further information on each group of products is available in our brochures:

Please indicate which meets with your interest—we will be happy to forward it immediately.

- ▶ "Sonneborn Purified Petroleum Sulfonates,"
- ▶ "Ultra Surface Active Agents and Their Applications,"
- ▶ "Emcol Surface Active Agents."

WITCO CHEMICAL COMPANY, INC., Dept. S-410, 122 East 42nd St., New York 17, N.Y.

Allied Chem. Names Patton

Actor H. Patton has been named director of product development for the General Chemical division of Allied Chemical Corp., New York.

Actor H. Patton

With the division 32 years, Mr. Patton has been manager of product development for the past 11 years. Earlier he served as sales manager of General's "Baker & Adamson" line of laboratory reagents and fine chemicals, and as manager of its New York metropolitan and St. Louis sales offices.

—★—

Cosmetic Chemists Program

Dr J. T. Davies of the University of Birmingham, England, will be honored at the semi-annual spring meeting of the Society of Cosmetic Chemists, to be held May 12, at the Biltmore Hotel, New York City. The all day meeting will feature eight technical papers according to program chairman Morris J. Root of G. Barr & Co., Chicago.

The Society's special award, which carries a prize of $1000, will be presented to Dr. Davies in recognition of his work in surface chemistry. Head of the department of chemical engineering at Birmingham, Dr. Davies' most important studies have been concerned with olfactory thresholds, interfacial viscosity of monolayers, and quantitative kinetic theories of emulsion type.

A paper on the "Physical and Chemical Properties of Shellac and its Derivatives" will be presented. Other papers will deal with contributions to the cosmetic industry by the chemical engineer, the organic chemist, the analytical chemist, the pharmaceutical chemist, the inorganic chemist, the physical chemist, and the biological chemist.

For advance registrations communicate with Walter Wynne, chairman of the arrangements committee, Society of Cosmetic Chemists, 2 East 63rd Street, New York. Cost of luncheon and meetings to members is $7.00, to nonmembers $12.00 each.

—★—

C-P Advances Maday

Joseph H. Maday was appointed recently manager of the Boston sales district, toilet articles division of Colgate-Palmolive Co., New York. He succeeds Frank J. Beuermann, who has retired after 35 years with the company.

Mr. Maday joined the company in 1949 as a salesman in the Philadelphia district, and in 1954, was promoted to district supervisor.

—★—

Thoma Joins Polyvinyl

Harold J. Thoma, formerly associated with the adhesive sales department of United Shoe Corp., has recently joined the sales department of Polyvinyl Chemicals, Inc., Peabody, Mass., as a technical sales representative.

Bon Ami 1960 Earnings Up

Bon Ami Co., New York, in a recent financial report for 1960 listed share earnings at 41 cents, as compared with none in 1959. Sales for 1960 rose to $5,349,677, up from $4,818,460 in the previous year. Net income for the year was $144,942, as compared with a loss of $636,518, reported in 1959.

—★—

Armour Reorganizes Dept.

An expansion and reorganization of the derivative sales department into two separate selling groups was announced recently by Armour Industrial Chemical Co., Chicago, a division of Armour & Co.

L. M. Miller, formerly sales manager of nitrogen derivatives, has been appointed sales manager of industrial chemicals. E. L. Rhoads, named western regional manager, will relocate the regional office in Los Angeles. K. M. Bierman has been named eastern regional manager and T. F. Yuschik continues as central regional manager, headquartered in Chicago.

Named sales manager of petroleum chemical sales is C. D. LaSusa, formerly southern regional manager of derivative sales, who will be headquartered in Dallas, Tex. J. E. Maloney, formerly petroleum chemicals industry manager, has been named field sales manager of the unit. Additional sales personnel have been added as well as assigned to each group, it was reported.

C. D. LaSusa

L. M. Miller

... And because of greater purity, HD-90 offers you higher product performance. Pilot HD-90 does a kind of cleaning on many hard surfaces that no other material can do at any concentration. That's *maximum quality level!* It means new sales areas for your products.

Because of greater purity, Pilot HD-90 is whiter in color and has less odor than any comparable product. *It can save you money on perfumes.*

Pilot HD-90 is stable in any weather. Even on hot, sticky, humid days production rolls along in high gear—and your products retain this all-weather protection, too.

Pilot HD-90 gives you greater flexibility in detergent formulations—builds more cleansing and sudsing power into what you make: *Automotive Cleaners, Dishwashing Compounds, Household Cleaners, Steam Cleaners, Bubble Baths, etc. Write for formulas and samples now.*

Packed in polyethylene-lined fibre drums and 5-ply paper bags.

Chemical Company of California

P.O. BOX 22130 • LOS ANGELES 22

Basic Processors of Hydrocarbons for
Sulfonate Flake
Sulfonate Liquids
Sulfonic Concentrates

Johnson's Wax Issues Anniversary Booklet

TO mark its 75th anniversary, S. C. Johnson & Son, Inc., Racine, Wis., published a special issue of its house organ, the *Jonwax Journal*. The March anniversary issue is a 64 page hard cover illustrated history of the firm and those who made it.

"Reflections on Our Diamond Year," the introductory feature authored by H. F. Johnson, chairman, briefly correlates the political and technological developments in the world at large with the remarkable expansion of the company. Means of communication, both transport and advertising, extended the marketing areas, stepped up demands, and created new fields of application. The automobile is a major example of the last contention.

H. M. Packard, president, writing about the "Challenge Ahead," stresses the need for research to keep abreast of new surfaces to be treated in every field and of new developments in raw materials, machinery and above all in packaging. He emphasizes the social responsibilities of business in a modern world.

"Technology and Technique—The Story of Manufacturing," by R. P. Gardner, manufacturing vice-president, is a thumbnail outline of the long road from hand filled and hand crated cans to the aerosol can and the high speed packaging and cartoning line.

Public relations vice president William N. Connolly tells the story of "one of the oldest national advertisers." "We have never stopped telling people about our products," he states and traces Johnson's advertising from early magazine ads to contemporary television programs.

Brief biographies of the firm's four presidents are included: Samuel Curtis Johnson, founder; his son Herbert F. Johnson; H. F. Johnson, who is now chairman of the board, and Howard M. Packard.

"Predicament of the Boss' Son" is a searching and humorous contribution by Samuel C. Johnson, great-grandson of the founder and vice-president and international regional director. He is headquartered in London, England.

Johnson's products are used the world over, that is the message of a picture feature entitled "Our Consumers Around the World."

Johnson's line of 24 maintenance products and the demonstration type sales approach used in marketing them are the subject of "The Big Difference," by E. J. Grant, general manager of the service products division.

"Finding New Pathways," by J. V. Steinle, vice-president of the research and development division, describes the part played by research in the diversification of the wax and polish line from floor wax to treatments for every type and kind of surface, in the introduction of insecticides and insect repellents and a host of other products.

R. W. Carlson, vice-president of the household products division, contributed "Accent on Sales." While "the market is larger . . . the pace faster . . . competition stronger" the basic philosophy behind Johnson's sales has not changed, Mr. Carlson contends.

"World-Mindedness" is the theme of A. O. Fisher, vice-president of the international division. He outlines the four regions of which the international division is composed. Currently, Johnson owns 1,198 trademarks in 77 countries; overseas subsidiaries manufacture and market 66 different Johnson products. In 47 years of international business the firm has expanded to include 130 markets. It has 16 subsidiaries in the larger markets and 14 licensed manufacturing distributors.

"Creative Packaging" is the title of a review article on packaging developments. Utility in packaging is the paramount consideration. Case histories of package modernization are presented, including "Jubilee" and "Pride." Change for the sake of novelty alone is rejected. Ideally a change in package should go hand in hand with a new product plus, according to A. E. Budner, household products development director.

The inside covers of the booklet carry maps of the world showing locations of Johnson's overseas affiliates and distributors.

New Minijector Unit

A new rinse injector, called "Model 6A Minijector," was recently introduced by Minijector Corp., Phoenix, Ariz. Said to be economical and efficient, the unit has a motor driven positive piston pump with a six ounce reservoir, manufactured to sell at $49.50. Minijector manufactures a full line of injectors and solutionizers.

—★—

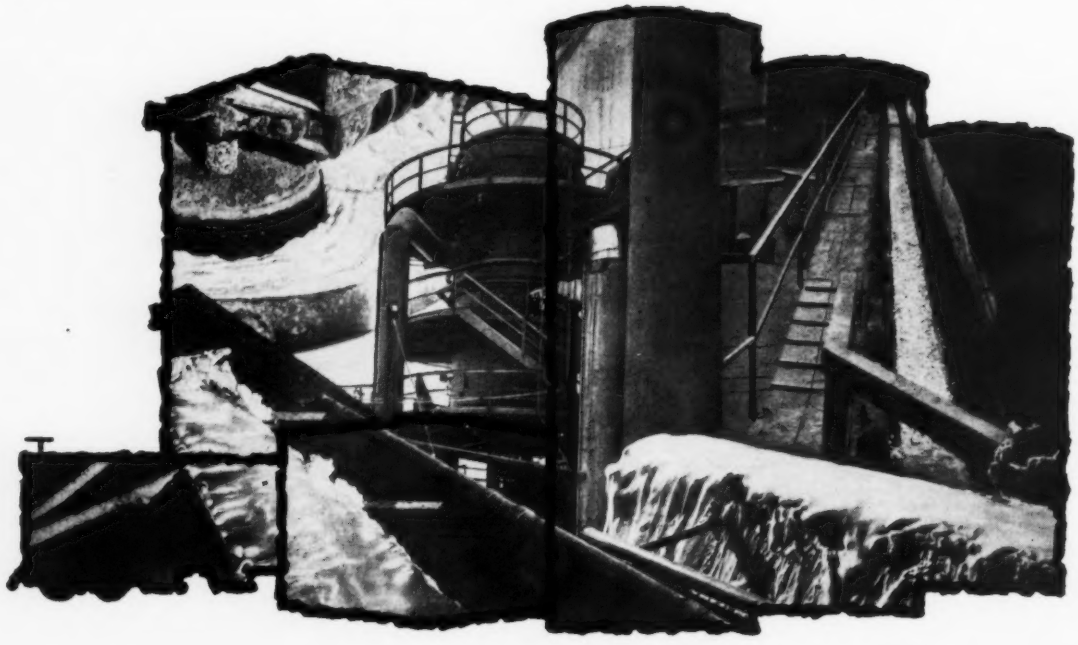
30 Years With Colgate

Edgar J. Hargrave, manager of the western sales region of the toilet articles division, Colgate-Palmolive Co., New York, marked his 30th anniversary with the firm March 9.

Mr. Hargrave started with Colgate in 1931 as a toilet articles salesman in the Los Angeles area. He became a district supervisor in 1943 and, three years later, was named district manager of the San Francisco sales district. In 1948, he was appointed regional manager of the division's western sales region.

WEST END

advance planning **OF EXPANDED SODIUM SULFATE PRODUCTION ANTICIPATES INDUSTRY'S GROWING NEEDS**



WEST END demonstrates its complete reliability as a major source by the continuing enlargement of its production facilities devoted to the manufacture of highest quality anhydrous sodium sulfate as a prime product. Independent of other product production and located at the site of vast natural raw material supply, West End is solidly qualified to handle the complete requirements of customers dependably, economically and efficiently.

Stauffer CHEMICALS

WEST END CHEMICAL COMPANY • DIVISION OF STAUFFER CHEMICAL COMPANY

636 CALIFORNIA STREET, SAN FRANCISCO, CALIFORNIA • PLANT: WESTEND, CALIFORNIA

All this for me?

Yes . . . this is one of the laboratories where we test new IFF fragrances "in the product" to be sure they are technically as well as aesthetically correct.

WONDERFUL WORLD OF FRAGRANCE

Service facilities, such as this Cosmetic Laboratory at IFF, New York, fully test newly-created perfumes and aromatic materials for shelf-life and compatability in all types of consumer products where fragrance is a factor.

In addition to the imaginative artistry of the perfumer, the creation of a successful new fragrance requires a thorough technical understanding of its use in the product for which it is produced. It is only with such thoroughness that truly outstanding perfumes can be developed to assure your new product effective and lasting sales appeal.

iff

VAN AMERINGEN-HAEBLER • POLAK & SCHWARZ

INTERNATIONAL FLAVORS & FRAGRANCES INC.

521 West 57th St. • New York 19, N.Y.

Creators and Manufacturers of Flavors, Fragrances and Aromatic Chemicals

ARGENTINA AUSTRIA BELGIUM BRAZIL CANADA ENGLAND FRANCE GERMANY HOLLAND ITALY NORWAY SOUTH AFRICA SWEDEN SWITZERLAND U.S.A.

Victor Ups McCambridge

Robert McCambridge has been appointed regional sales manager of Victor Chemical Works,

Robert McCambridge

division of Stauffer Chemical Co., New York, it was announced recently.

Mr. McCambridge started in the company's sales department in 1951. He subsequently became a sales representative in the Kansas City territory and later was placed in charge of sales for the state of Texas. In 1958 he was transferred to the New York sales office and appointed assistant regional sales manager. Mr. McCambridge succeeds Rainsford F. Cotton, who has retired for reasons of health.

—★—

AOCS Meeting Program

Seven papers on detergents and a seminar on toxic residues will be among the highlights of the 52nd annual meeting of the American Oil Chemists' Society to be held May 1, 2, and 3 at the Sheraton-Jefferson Hotel, St. Louis.

The seminar, scheduled for Monday afternoon, May 1, will feature a talk on "Procedure for Establishing Tolerance Levels," by Robert S. Roe of the Food and Drug Administration. Harry E. Heinemann of Pet Milk Co. will speak on "Pesticides in the Dairy Industry" and George Decker of the Illinois Section of Economic Entomology will discuss "Pesticides —Their Uses, Values, and Dangers."

The detergent session will hear the following presentations:

"Correlation Between Critical Micelle Concentration, Fatty Soil Removal, and Solubilization," by M. E. Ginn and J. C. Harris, Monsanto Chemical Co., Dayton, O.;

"Determination of Germicide Mixtures in Soaps and Detergents," by Eric Jungermann and E. C. Beck, Armour & Co., Chicago;

"Identification of Soapstock by Gas Chromatography Techniques," by E. C. Beck, Eric Jungermann, and W. M. Linfield, Armour & Co.;

"Statistical Approach to Detergency Evaluation," by W. M. Linfield, Eric Jungermann, G. A. Davis, and E. C. Beck, Armour & Co.;

"Sodium Alkyl *alpha*- Sulfopelargonate, Wetting and Related Properties," by A. J. Stirton, R. G. Bistline, Jr., J. K. Weil, and W. C. Ault, Eastern Regional Research Laboratory, Philadelphia;

"The Oxyethylation of 9,10-Octadecanediols and 9,10-Dihydroxystearonitrile Soaps," by A. N. Wrigley, F. D. Smith, and A. J. Stirton, Eastern Regional Research Laboratory;

"A Method of Evaluation of Detergent Efficiency in the Spray Cleaning of Hard Surfaces," by John W. McCutcheon, Inc., Morristown, N. J.

—★—

In New Pennsalt Post

Ralph C. Schaeffer was appointed district sales manager, with headquarters at the newly opened Salt Lake City, U., office of Pennsalt Chemicals Corp., Philadelphia. Announcement of Mr. Schaeffer's appointment was made in mid-March by L. M. Shanaman, sales manager of the industrial chemicals division — west for Pennsalt. Mr. Schaeffer joined Pennsalt in 1947, and later was transferred to industrial chemicals sales. He established the company's inside sales offices at Portland, Ore., and returned to Pennsalt's Tacoma offices where he served as assistant district manager.

Torino Visits Givaudan

Fernand Torino, chief perfumer of Companhia Brasileira Givaudan, Sao Paulo, Brazil, has

Fernand Torino

just completed a visit with Givaudan Corp. in the United States, on his return from Europe where he visited Givaudan facilities in France, Switzerland and England. Mr. Torino's visit continues the close coordination of perfumery research and development between the company's American, Brazilian and European creative perfume laboratories.

—★—

Johnson's Wax Honored

S. C. Johnson & Son, Inc., Racine, Wis., was honored recently at a dinner sponsored by the Racine Chamber of Commerce, paying tribute to the firm on its 75th anniversary. Over 600 businessmen and community and civic leaders attended.

George Wheary, former chamber president, called Johnson "an Ambassador of the real American philosophy" in tracing its growth from a two man parquet flooring operation to its present position in the wax and chemical specialties field. Johnson now employs 3,000 and has 182 operations throughout the world.

—★—

Pfizer Moves Offices

Charles Pfizer & Co., New York, manufacturing chemists, recently moved its headquarters from 800 Second Ave., to 235 East 42nd St.

To make a good shampoo...
you need CARBIDE'S Ethanolamines

Good detergent action, mild alkalinity, and bland skin action—are three reasons why soaps based on mono-, di- or triethanolamine are used to make fast selling hair shampoos. For example, a good shampoo is made from a coconut oil soap of triethanolamine which combines excellent detergent, lathering, and rinsing properties.

Amine soaps, made with triethanolamine or mono- and triethanolamine, are easily emulsified. Thus, excellent products can be prepared by simplified and less-costly emulsification procedures. Also, soaps based on CARBIDE's ethanolamines are non-corrosive and have excellent storage stability.

You can obtain valuable technical information and suggested formulations for solvent emulsions, "soluble" oils, wax emulsions, and oil and wax polishes by calling your CARBIDE Technical Representative. Or, write Department B, Union Carbide Chemicals Company, Division of Union Carbide Corporation, 270 Park Avenue, New York 17, New York.

UNION CARBIDE
CHEMICALS COMPANY

UNION CARBIDE

Givaudan Sales Meeting

E. R. Durrer, president, and R. E. Horsey, vice-president in charge of sales, Givaudan-Delawanna, Inc., New York, presided over a recent four day sales meeting of the firm and its associate companies, Givaudan Flavors, Inc., and Sindar Corp., both of New York; which was held in that city.

Included in the conference was an all-day visit to the company's plant at Delawanna, N. J., where new techniques and modern production facilities were demonstrated. Members of the executive and marketing staffs of the companies participated in the program, during which operations of the firms were reviewed.

The growth of the international Givaudan organization and the expansion of its production facilities were discussed, with emphasis on the services available to American firms with foreign branches. The research and development activities of the company in the fields of fragrances, aerosols, cosmetics and specialty products were reviewed, as were the company's programs in the fields of flavors, odorants for industrial application, germicides, fungicides and sunscreening agents.

The meeting was closed with a banquet addressed by Mr. Durrer, Mr. Horsey and Xavier Givaudan, grandson of one of the founders of the company.

—★—

FTC Warns on Toiletries

Bureau of Consultation, Federal Trade Commission, recently requested the cosmetics and toilet preparations industry to discontinue any improper foreign origin representations for domestically-made products. If this is not done voluntarily, the Bureau warned, the FTC's mandatory procedures may be used to obtain compliance with the law.

The request and warning stem from complaints received by the Commission concerning the promotion of products containing both domestic and imported ingredients, which are mixed or blended in this country. The complaints alleged labels and advertising contain words, names and phrases denoting foreign origin but do not disclose properly the domestic processing as required by Rule 3 of the trade practice rules for the industry.

The commission contemplates that voluntarily revised labeling will be placed in use industry-wide no later than June 30, with samples submitted to the Bureau for filing along with a statement that such material is in use.

Members of Givaudan-Delawanna, Inc., New York, and its associate companies, Givaudan Flavors, Inc., and Sindar Corp., both of New York, at a recent four-day sales meeting, held in that city.

Schenberg Babbitt V-P

Jack Schenberg was recently elected a vice-president and appointed director of corporate mar-

Jack Schenberg

keting for B. T. Babbitt, Inc., New York. He is responsible for all marketing activities of the household products and drug division of the company.

Mr. Schenberg had been a founder and executive vice-president of Connecticut Chemical Research Corp., Bridgeport, Conn., aerosol loading firm and its subsidiaries. He became manager of the aerosol division of Babbitt, when it was acquired by the company in 1956.

It was also announced that Robert Oliver has been named marketing manager of Babbitt's household products division and that Michael Cerra has been appointed marketing manager of the Charles Antell drug products division.

Mr. Oliver, with Babbitt since 1956, was formerly plant manager for Chemicals, Inc., Oakland, Calif. Prior to joining the company five years ago, Mr. Cerra had been associated with two advertising firms in New York.

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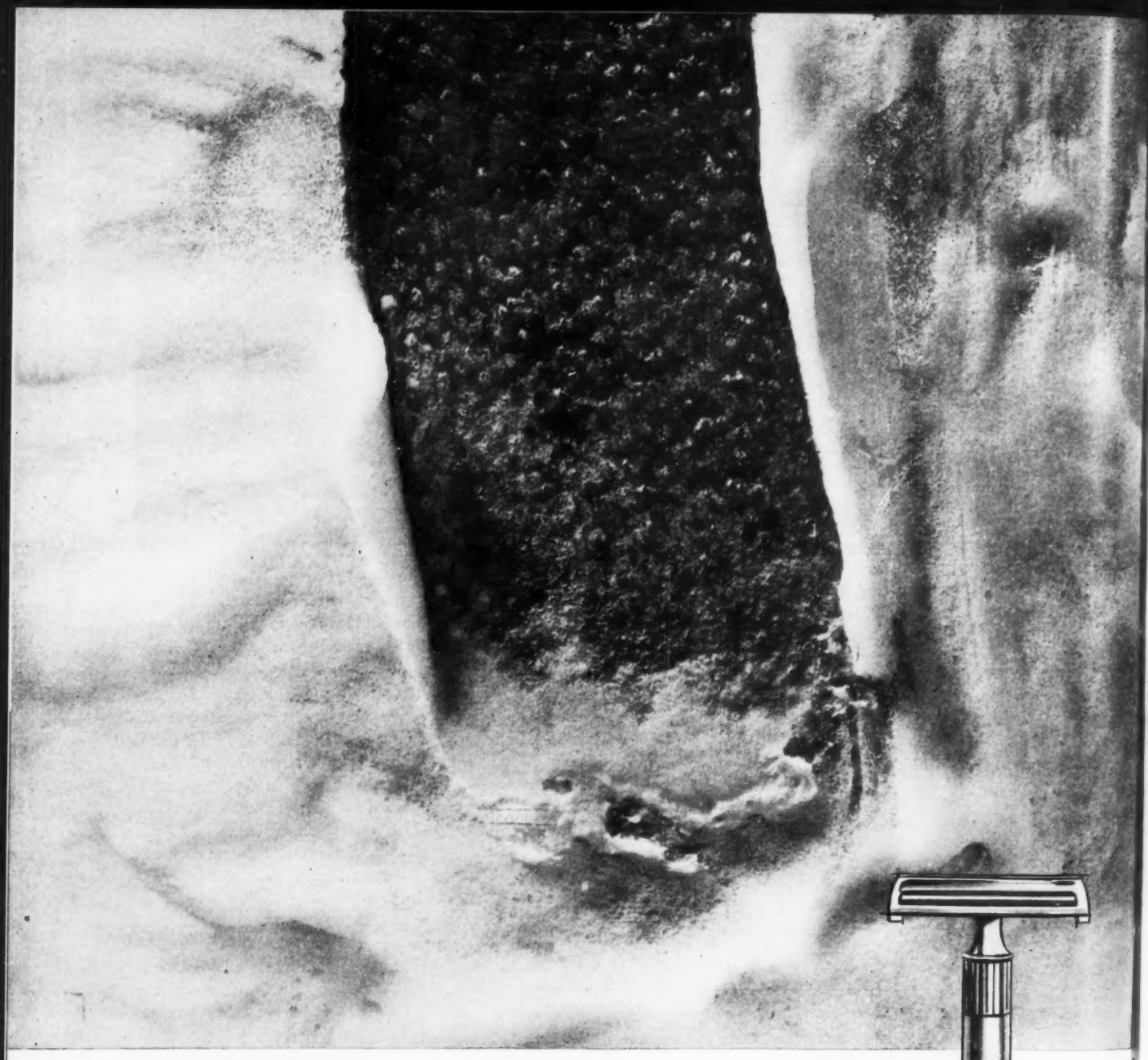
CMCS Schedules Meeting

The 4th Annual Meeting and Conference of the Canadian Manufacturers of Chemical Specialties Association, will be held at the Royal York Hotel, Toronto, October 30th to November 1st, 1961.



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CHEMICALS DIVISION Olin

Toilet Goods Ass'n. Meets May 9-11

"SHOULD Cosmetic Firms Go Public?" is one of the topical questions to be spotlighted at the 26th annual convention of the Toilet Goods Association, to be held May 9, 10, 11, at the Waldorf Astoria Hotel, New York. The subject will be discussed by John L. Kelsey, partner, Eastman, Dillon, Union Securities & Co., New York.

Another major feature at the convention will be a panel, entitled "Packaging Profiles of the Future."

A brief outline of the program follows: Tuesday, May 9, at 10:00 A.M., meeting is opened formally by Jean Despres (Coty Inc.), TGA president, who will give the presidential address. Philip C. Smith of Yardley of London, Inc., New York, will present the treasurer's report, and Jim Moran of Jim Moran Associates, Inc., New York, will give a talk entitled "People, Places, Things."

The packaging panel, scheduled for the afternoon, will include four panelists: Charlotte Montgomery of *Good Housekeeping Magazine* will present the consumer's viewpoint; A. H. Lawrence, Freon Division of E. I. du Pont de Nemours & Co., Wilmington, Del., will speak on "Pressure Packaging of Toilet Goods"; Ernest Ehrman of Ehrman & Reiner, Inc., New York packaging consultants, will present the consultant's viewpoint; the fourth panelist, John Miller of Cunningham & Walsh, New York advertising agency, will report on consumers' reactions to toiletries at point-of-purchase. Tuesday's program will be concluded by a cocktail party starting at 4:30 P. M.

A talk on the "Economic Outlook," to be presented by Raymond G. Fisher, economist for Continental Can Co., New York, will open Wednesday (May 10) morning's session. This will be followed by Mr. Kelsey's address. After luncheon a film will be shown on "The New York World's Fair of 1964" with commentary by H. V. Kaltenborn. Bill Berns of the World's Fair Corp., will introduce the film. The afternoon of May 10 will be devoted to the Industry Meeting, open to manufacturers, suppliers, and the press.

TGA's Scientific Section will hold its all day semi-annual meeting on Thursday, May 11. "A Study of Aerosol Shaving Cream Using Statistical Experimental Design," by Phyllis Carter and H. Mack Truax of Atlas Powder Co., Wilmington, Del., will be one of the highlights of the technical program consisting of eight presentations.

Other papers and their authors include: "Instrumental Evaluation of Commercial Citronellols and Geraniols and Their Esters," by James A. Rogers, Jr., and Zolton E. Toth, Fritzsche Brothers, Inc., New York; "The Use of Hairless Mice for Study of Cosmetics," by F. Homburger, A. Tregier, J. R. Baker, and A. B. Russfield, of Bio-Research Consultants, Inc.; "The Correlation Between Animal Tests and Human Tests in Assessing Product Mildness," by J. D. Justice, Lever Brothers Co., New York; "Some Technical Problems in the Color Additives Field," by G. Robert Clark, Division of Cosmetics, Food and Drug Administration, Washington, D.C.; "The Ionones and Methyl Ionones: A Structure Study via Nuclear Magnetic Resonance," by Ernest T. Theimer, and Seymour Lemberg, International Flavors and Fragrances, Inc., New York; "In Vitro Studies on Water Diffusion and Uptake of Human Skin," by Peter Flesch, University Hospital, University of Pennsylvania, Philadelphia; and the "Skin Respiration Factor: Evaluation of USP Ointments," by Henry Goldschmiedt, Institute of Applied Biology, and Irwin I. Lubowe, dermatologist, New York.

The new vice chairman of the Scientific Section will be elected just prior to luncheon. The annual award of CIBS (Cosmetic Industry Buyers and Suppliers) will be presented at lunch.

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Two Join Lueders Club

Alfred Dittrich and Berardo Noguera, two employees of George Lueders & Co., New York, were recently admitted to its 25 year club and honored at luncheons attended by the 65 members of the club. The new members received gold wrist watches and gifts from company officials and fellow employees.

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Brewer in New Nopco Post

Appointment of Walter E. Brewer as general sales manager of the industrial division of Nopco Chemical Co., Newark, N. J., was announced in mid-March. The post is a new one. Previously Mr. Brewer was sales manager of Nopco's textile fibre department and the firm's Jacques Wolfe & Co. subsidiary. Mr. Brewer joined Nopco in 1936 as a control chemist, and subsequently served as a sales representative in New England and Pennsylvania. He was named eastern district sales manager in 1948, and in 1955 became sales manager for Nopco's textile chemicals and textile fibre departments.

Walter E. Brewer

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Milwaukee, Wisconsin Solvents & Chemicals Co., GR 6-2630
New Orleans, Southern Solvents & Chemicals Corp., VE 3-4666
Rochester, Buffalo Solvents & Chemicals Corp., LO 2-5980
St. Louis, Missouri Solvents & Chemicals Co., GA 1-3495
Toledo, Toledo Solvents & Chemicals Co., JE 6-3771
Windsor, Ontario, Western Solvents & Chemicals Ltd., CL 2-0933

New Solutionizing Device

A new electronic device which automatically measures and controls the concentration of cleaning solution in commercial and industrial washing equipment was announced recently by Redford Corp., Scotia, N. Y. The feed controller, tradenamed "Soap Saver," is designed to measure continuously the strength of the solution and automatically starts the pump and other feed equipment when the concentration drops below the desired level. When the correct amount of detergent has been added, the unit stops the feeder and continues to monitor the solution.

Benefits claimed for the new unit include need for less detergent; assurance of proper cleansing of utensils, and saving of time by the operator for manual filling and checking of solution.

A feature of the system is a newly designed sensing probe which is installed in the tank of solution. The controller is made of stainless steel and ceramics, and is claimed to be accurate and reliable under many different operating conditions. Either solid or liquid soaps and detergents may be used with the controller. The new unit uses solid state components to obtain high sensitivity and can detect small changes in solutions as weak as one part in 400 with an accuracy of about four per cent.

The "Soap Saver" can be installed in any of a variety of locations, usually in sight of the operator. A white indicator lights up when the feed equipment is operating, and a red one indicates when the feeder is empty.

Operated on 110 volts AC, the unit has two control leads; one to the feed equipment, and the other, which is low voltage, to the sensing probe in the washer's tank of solution. Operating ranges of the controller are preset at the factory and can be adjusted after installation to meet individual conditions at each location.

New electronic "Soap Saver," recently introduced by Redford Corp., Scotia, N. Y.

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Pesticide Output Up in '60

United States production of pesticides and other organic agricultural chemicals in 1960 amounted to 637 million pounds according to the recently published preliminary report by the U. S. Tariff Commission. The 1960 production is nine per cent more than the total of 585 million pounds reported for 1959. Sales in 1960 were 558 million pounds, valued at 253 million dollars, compared with 503 million pounds and 225 million dollars in 1959.

Output of cyclic pesticides and other chemicals included in the cyclic group amounted to 517 million pounds in 1960. This represents an increase of 10 per cent over 469 million pounds produced in 1959.

Sales of cyclic compounds in 1960 totalled 446 million pounds, valued at 196 million dollars, compared with 410 million pounds and 172 million dollars in 1959. Output of DDT was reported at a record high of 164 million pounds. DDT has been biggest item in this group ever since 1944, when its production was first separately reported.

Production of acyclic pesticides and acyclic organic agricultural chemicals in 1960 amounted to 120 million pounds, compared with 117 million pounds reported for 1959. Sales in 1960 rose to 112 million pounds, valued at 57 million dollars, from 93 million pounds and 53 million dollars in 1959.

In Ungerer 25-Year Club

Norman E. Gallagher, sales representative of Ungerer & Co., New York, recently became a member of its Quarter Century Club, at a luncheon in his honor, attended by club members and officers of the company.

Norman E. Gallagher

Kenneth G. Voorhees, president of Ungerer, presented Mr. Gallagher with an engraved gold watch in commemoration of his 25 years of service to the firm.

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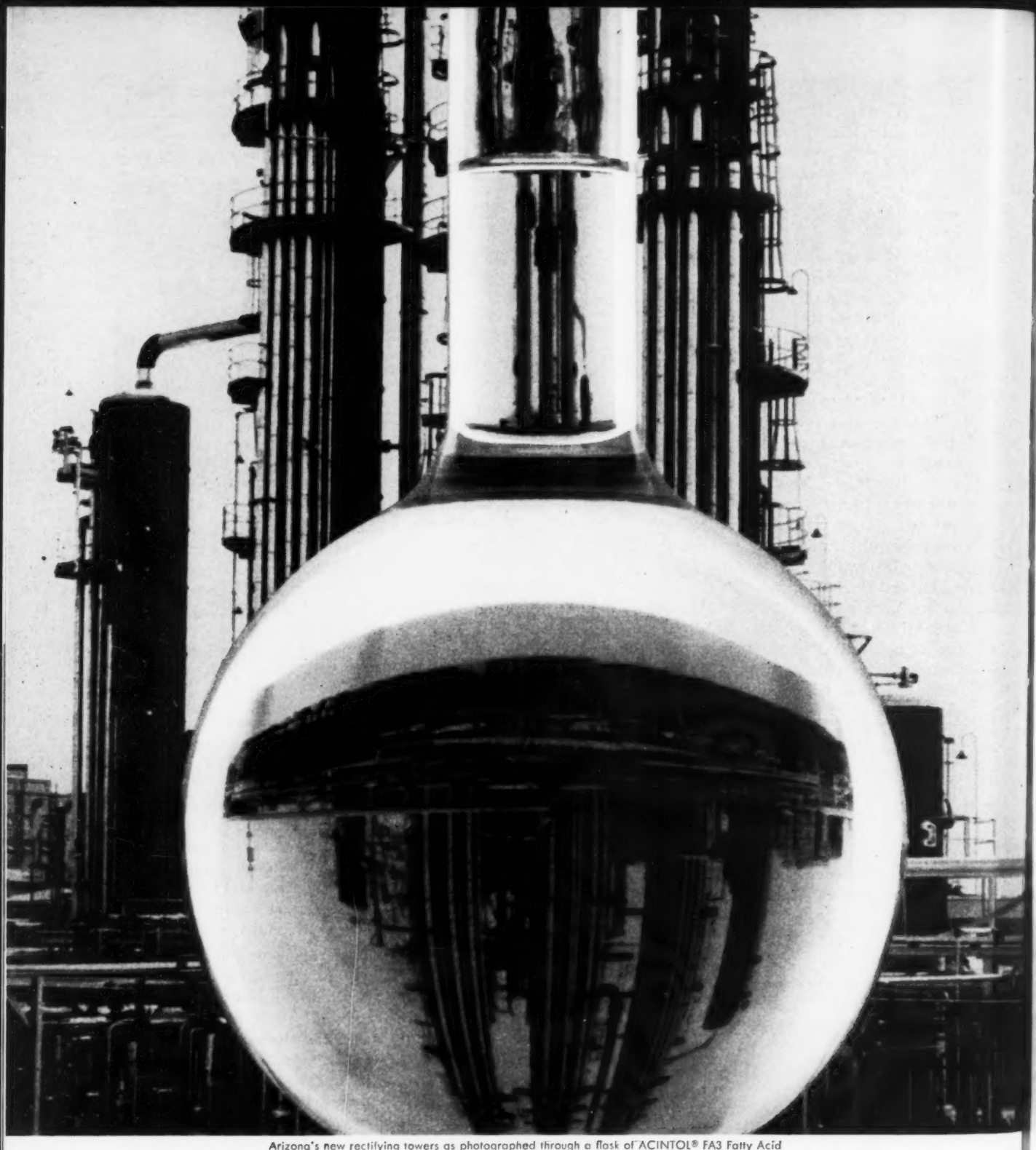
Enters Maintenance Field

Armstrong Cork Co., Lancaster, Pa., will enter the commercial floor maintenance field in the near future and establish a system of distribution for maintenance products through manufacturer's representatives and selected janitorial supply houses, it was announced recently.

The janitorial supply houses will, in turn, sell a special line of Armstrong maintenance products to building managers and maintenance contractors. Individual firms are being selected based on their facilities and background to handle the specialized requirements of the commercial and institutional building market. According to O. W. Fenn, Jr., Armstrong's marketing manager for sundries products, "the company has long realized the critical need for specially formulated commercial floor maintenance products," thus its intense efforts in that direction.



Arizona's new rectifying towers as photographed through a flask of ACINTOL® FA3 Fatty Acid

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Treplow Appoints Borowsky

Harry H. Borowsky recently was appointed manager of sales development for Treplow Chemical

Harry Borowsky

Co., Paterson, N. J. Treplow, a wholly-owned subsidiary of Richardson Co., Melrose Park, Ill., manufactures surface active agents including alkyl aryl sulfonates, alkyl sulfates, ethoxylated alkyl sulfates, hydrotropes, alkanolamides and quaternary ammonium compounds.

It was also announced William B. Mason has been appointed western sales manager for the company. Mr. Mason will be located at the main office of the Richardson Co.

Both men were formerly with Intex Chemical Corp., Lodi, N. J.

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Walter E. Dove Dies

Walter E. Dove, 66, internationally known entomologist and parasitologist of Millersville, Md., died of cancer March 22, at Arundel General Hospital, Annapolis, Md.

Dr. Dove retired in 1959 from his position as director of technical development of insecticides at the Fairfield Chemical plant, Baltimore, Md., of Food Machinery and Chemical Corp., New York. He continued in an advisory capacity with the company.

His career included 14 years in technical development of safe insecticides in the pesticide industry and more than 27 years as an entomologist with the U. S. Department of Agriculture at Washington, D. C., and at posts throughout the United States and Alaska.

Dr. Dove was awarded the silver medal of the American Medical Association for his work on endemic typhus; was commended by the War Department for his work as Consultant to the Surgeon General in matters relating to control of insect-borne diseases; and shared, with other scientists of the Orlando (Fla.) Laboratory, U.S.-D.A.'s Distinguished Service Award.

He is survived by his wife, three sons, and two grandchildren.

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Baird to Build Plant

Baird Chemical Co., New York, recently announced it will construct a midwestern plant to produce sorbitol. The product is widely used as a substitute for glycerine in pharmaceuticals, dentifrices, cosmetics and foodstuffs, and other products which require a humectant-plasticizer vehicle. A relatively new use of the product is in the production of polyurethane foams. Subsequent production stages will deal with organic chemicals presently under development by the company.

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Hercules, Ltd. Names Morse

Thomas S. Morse has been appointed sales manager of Hercules Powder Co., Ltd., Canada, it was announced recently. Mr. Morse, who joined Hercules in 1940, will make his headquarters in Montreal.

Rohm & Haas Earnings Dip

Although sales increased $2,289,000 in 1960, net earnings for Rohm & Haas Co., Philadelphia, dipped to $21,290,000, as compared with $23,161,000 in 1959. Total cash dividends declared and paid on common stock in 1960 amounted to $3.00 per share, the same amount paid in 1959. Sales in 1959 were at $215,909,000, a previous record high.

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New Pennsalt Laboratory

Pennsalt Chemicals Corp., Philadelphia, recently announced the transfer of its sales technical service groups to new and expanded laboratory facilities at 900 First Ave., King of Prussia, Pa. These groups were previously located at Pennsalt's Whitemarsh Research Laboratories, Wyndmoor and Devon, Pa.

The two-story, 31,000 square foot customer service laboratory, is the first unit to be completed in the company's planned $6,000,000 technical center, to be located on a 50-acre site in King of Prussia industrial park.

The move will centralize all groups providing technical customer services for "Isotron" refrigerants and aerosol propellants; rubber chemicals; proprietary materials for metalworking, household products, laundry and drycleaning, and food and dairy plants. The company anticipates breaking ground for a second building by midyear, it was reported.

Artist's conception of new sales technical service laboratory of Pennsalt Chemicals Corp., Philadelphia, located in King of Prussia, Pa., industrial park.

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Geigy Names Hightower

William Hightower has been appointed to the south central district field sales staff of Geigy Agri-

William Hightower

cultural Chemicals, division of Geigy Chemical Corp., Ardsley, N. Y. Mr. Hightower was formerly associated with the technical sales department of Velsicol Chemical Corp., Chicago, covering Mississippi and Tennessee. Previous to that he had been with the Black Leaf Division of Diamond Alkalai Co., Cleveland.

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NSSA Set to Meet

The 38th annual convention and trade show of the National Sanitary Supply Association, to be held at the Conrad Hilton Hotel, Chicago, April 23-26, will be highlighted by a business and sales management conference. Scheduled for Tuesday afternoon, April 25, the conference will be conducted by Dr. Robert T. Davis, Stanford University Graduate School of Business, Stanford, Calif. It will summarize information developed at regional conferences organized by NSSA.

More than 200 exhibitors will participate in the show which will be open from 9:00 a. m. to 6:00 p. m. on Sunday, April 23; from 9:00 a. m. to 5:00 p. m. on Monday, April 24; and 9:00 a. m. to 12 noon on April 25 and 26. Representatives of nonmember firms who are eligible for membership in NSSA may view exhibits on Sunday, April 23 by invitation only and upon payment of $10.00 registration fee.

Herbert J. L. Baum of Mipro Metal Products Co., So. San Francisco, Calif., president of NSSA, will formally open the convention at the annual dinner meeting on Monday evening, April 24. His welcome address will be followed by the reports of NSSA vice-president Samuel Newman of Creco Co., Long Island City, N. Y., and of executive vice-president Leo J. Kelly. Mr. Baum will appoint a nominating committee which will select a slate of officers and directors for the coming year.

Featured guest speaker at the dinner meeting will be Millard Bennett, author and publisher, his subject: "How to Get Others to Act Favorably With You."

Election of officers and directors will take place Tuesday afternoon at 1:30 p. m.

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CIBS Hear Giants

140 members and guests attended the Cosmetic Industry Buyers & Suppliers Association March 9th luncheon at the Hotel Pierre to hear Kyle Rote and Andy Robustelli of the New York Football Giants. Rote, co-captain of the Giants and director of sports and community relations for radio station WNEW, provided interesting details regarding offensive football in the pro ranks, while Andy Robustelli defensive captain covered the defensive side of the picture. Robert C. Ring of Hewitt Soap Co., CIBS president, presided and introduced the guest speakers.

New Gulf Oil Sales Rep.

Stanley J. Czerwinski was recently named sales representative in the New York petrochemi-

Stanley Czerwinski

cals office of Gulf Oil Corp., Pittsburgh. He is engaged principally in the field of technical service on oxo alcohols.

For the past four years Mr. Czerwinski has served as a sales representative for several companies for plasticizers, dodecyl benzene, and vinyl plasticizers.

L to R: Walter Morton, Hazel Atlas Glass Division, CIBS luncheon chairman; Robert C. Ring, Hewitt Soap Co., CIBS president; Kyle Rote, New York Giants, Andy Robustelli, New York Giants and Herbert K. Gray, Pacquin, Inc.

HIS Shaving cream that lathers just right, wilts whiskers—yet leaves his face silken-soft—because it contains non-irritating ethanolamides as dispersing agents. Ethanolamides, too, keep his hair tonic well-dispersed, creamy. And as emulsifying agents, they keep the polish for his shoes and car smooth and uniform until the container's empty. He demands these qualities in products he buys.

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Babbitt Reports 1960 Loss

B. T. Babbitt, Inc., and consolidated subsidiaries, New York, recently reported a net loss of $146,241, or 15 cents per common share for 1960. This compares with a net loss of $1,589,734, or $1.33 per share for the previous year. It was noted that a loss of $628,396 in the first half of 1960 was largely offset by a profit of $482,155 in the second half of the year.

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Antara Appoints Mayhew

Raymond L. Mayhew was recently appointed manager, technical service and development, Antara Chemicals, a division of General Aniline & Film Corp., New York. Dr. Mayhew's assignment is a new position within the recently changed structure of the parent firm's chemical group, formerly the dyestuff and chemicals division. He is responsible for the technical service as well as sales and product development of present product lines.

R. L. Mayhew

Dr. Mayhew joined General Aniline in 1944 as a research chemist at the Central Research Laboratories, Easton, Pa. He was made a group leader of surfactants research in 1950, and program manager in charge of chemical specialties in 1955.

Industrial Cleaners Sales

Results of a survey of industrial detergents sales in 1958 and 1959 have just been reported by the Chemical Specialties Manufacturers Association. Conducted by the Detergent and Cleaning Compounds Division of CSMA, the survey does not include products used in the household.

Total sales of finished products as sold were reported by 61 member companies.

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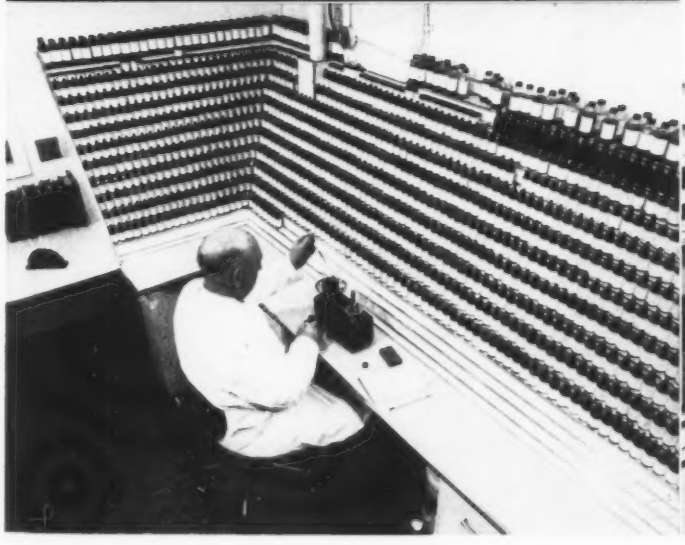
West Quarterly Report

West Chemical Products, Inc., Long Island City, N. Y., recently issued a financial report for the first quarter of 1961, which ended February 28. Net sales increased to $5,637,000 from $5,125,000 for the same period in 1960. Net income dipped to $116,000, as compared with $121,000 for the same period the previous year. Earnings per share dropped a penny, from 29 cents in 1960.

Top left: A four foot high sign and spotlights providing nighttime illumination are part of the recently completed plantwide remodeling program at Fries & Fries, Inc., Cincinnati

Quaid Bloom, perfume chemist, (lower left) in new laboratory housing approximately 3,000 bottles of raw materials, prepares a compound for scenting a liquid dishwashing detergent.

Bottom right: Technician Ronald Gabard, is shown removing an aerosol shave cream from an oven after running an accelerated test for compatability and stability.



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* U.S. Patent 2,680,769

Quality Control

(*From Page* 129)

duction and quality control people. They should then actually use the product and become familiar with it and surely some of its competitors, too. And since in this case we are dealing with an aerosol furniture polish, they must keep in mind the key consumer qualities of this product. Basically, these qualities are simple: the product's ability to produce a good shine on furniture and to do this quickly. The control people should, with the help of the manufacturer, devise some simple use tests to measure just these characteristics, speed of use and quality of shine. If the product does not exhibit these two qualities, it matters not whether there is the right pressure in the can or whether the spray pattern is satisfactory.

I had intended to bring down with me a couple of bad examples from Mrs. Harrison's under-the-sink cabinet, but they did not arrive. But I think I can adequately describe a couple of them to you.

One of them was an aerosol furniture polish. I have had a continuing interest in products of this kind, and I was amazed when I used one particular brand. Although it worked very rapidly, it never produced a shine, which I thought was odd.

I therefore went back to my point of purchase and I picked up several more – checking lot numbers on the bottom of each can – to see if perhaps I had just gotten hold of a "lemon." But it turned out that the stock on the shelves and in the back room of the store were all of the same lot.

On closer analysis I realized that a window cleaner formula instead of aerosol furniture polish had been loaded, and that the product had been mislabeled.

Another example I can tell on my own company. We were at the time selling an aerosol-dispensed depilatory for removing unwanted hair. Somebody decided that it would be cheaper if we changed to a small over-cap. To do this they would simply cut off part of the spout. The change was effected, and we received nearly 100 per cent returns. With the spout cut off it was necessary to tip the can almost half way over for proper dispensing, and since this was a nitrogen pack the product became completely unusable because of degassing. A simple single use test by the loader could have avoided this. By the time our quality control people spotted it, it was too late; production was complete.

The purpose of my remarks is to direct attention to some very simple testing of products for "real" quality. They don't have to be refined tests. They don't have to be tests with many samples. Just tests to keep the products usable. Tests that will quiet such oft-heard consumer complaints as "Why can't they make these push-button products so you can get the product out?" or "Why do we have to pay so much for aerosol gadgets that don't work?"■

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Soap Firm Acquired

Maestre Industries, Ltd., British Honduras, a group of businesses including the manufacture of laundry soap, was recently purchased by the Consolidated Development Corp., Pompano Beach, Fla.

Janovsky Joins Florasynth

Harold L. Janovsky, formerly head of Fritzsche Brothers, Inc., New York, flavor laboratories,

Harold L. Janovsky

has been appointed technical director of Florasynth Laboratories, Inc., New York, it was announced recently.

The company reports that expansion of new operational activities and introduction of new products, resulting from accelerated research and development programs, necessitated the creation of Mr. Janovsky's position, to service the increasing sales volume and technical requirements of Florasynth customers.

Mr. Janovsky, in the industry for 27 years, is noted for his varied industry affiliations, technical articles in publications, and lectures on the subject of food and flavor technology.

Shown at the three day sales and technical conference, entitled "Make Sales Hum in '61," held by Magnus, Mabee & Reynard, Inc., in New York recently are, standing, back row, left to right: George H. McGlynn, vice-president & treasurer; Robert B. Magnus, Jr., assistant treasurer and conference co-chairman; Percy C. Magnus, president; Bernard Jeffs, director of advertising and conference chairman; Shockley C. Gamage, assistant to the president; Joseph Baird Magnus, executive vice-president, and Robert B. Magnus, Sr., executive vice-president.

Lever Sales Drop in 1960

According to a recent report by Lever Brothers Co., New York, sales volume and net profits declined in 1960, although both totals were the second largest in its recent history. Sales dipped to $388,600,000 from the record high of $409,600,000 in 1959. Net profits declined to $11,400,000 from the high of $15,200,000 for the previous year.

The report ascribed the reduction from the record levels of 1959 to the spotty effect of less favorable economic conditions and competition within the industry which "continued to mount at an accelerated pace." It also cited the heavy initial expense of new products still in test markets or in the early stages of expansion.

Marketing progress during the year and in early 1961, according to the report, was made with the expansion into national distribution of five new products. Among these are liquid "all," low-sudsing liquid detergent; "Swan Liquid," a pink lotion dishwashing detergent and "Pine Green Lifebuoy Soap," a companion product to the coral and white bars.

Eight other new products were introduced in test markets during 1960. Among them were "Vim," a low-sudsing laundry detergent in premeasured tablet form; "Reward," an all-purpose liquid household cleaner containing ammonia; "Nifty," a liquid scouring cleanser; and "Starlight Shampoo Puffs," a new form of shampoo and hair conditioner. The report also stated that appropriations for research and development were greatly expanded.

—★—

Hostawax Names Gaertner

Appointment of Eduard Gaertner to succeed Kurt Wasserman, who resigned as technical director, was announced late last month by Hostawax Co., Mountainside, N. J., a division of Hostachem Corp.

Formerly associated with Wax & Rosin Products, New York, then exclusive distributor in the United States of "Hoechst" waxes, Kurt Wasserman joined Hostawax in Dec. 1958 when it was originated to take over the distributorship.

Mr. Gaertner has been with Farbwerke Hoechst, A. G., Frankfurt am Main, Germany, for the past six years. Manufacturer of "Hoechst" waxes at its plants in Gersthofen near Augsburg, Farbwerke Hoechst is Hostachem's parent company. Mr. Gaertner has been engaged in research and development work at Gersthofen, and has been responsible for technical service on "Hoechst" waxes in various European countries, Australia and New Zealand. In his current position he heads the newly expanded Hostawax laboratories at Mountainside. Their main function is technical service and development work to assist formulators using "Hoechst" waxes.

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P&G Stock Split Approved

Shareholders of Procter & Gamble Co., Cincinnati, recently approved a two-for-one split of the company's common stock. P&G's authorized number of shares will be changed from 25,000,000 with a par value of $2 each to 50,000,000 shares with no par value. Each outstanding share of common stock will be exchanged for two shares of the new stock. Company officials stated certificates for the new shares would be mailed on or after April 7.

—★—

Du Pont Gains Overseas

Overseas business of E. I. du Pont de Nemours & Co., Wilmington, Del., rose 21 per cent in 1960, to $363,000,000 from $300,000,000 in 1959, it was reported recently. Exports of du Pont products manufactured in the United States last year rose 28 per cent to $218,000,000. A major part of the company's gain in foreign business was achieved in Europe, it was reported.

—★—

Colgate Appoints Farrar

Richard E. Farrar has been appointed to the newly created position of manager-research coordination for the household products division of Colgate-Palmolive Co., New York, it was announced recently. Dr. Farrar, previously manager of the liquid products area in the household products division's research department is responsible for coordination between the division and the research and development department of technical matters pertaining to the research, development, and marketing, of present and contemplated household products.

Dr. Farrar started with the research and development department of the company in 1951 as a senior project chemical engineer. He was named manager of the bar products area in 1957, a post he held until September 1960, when he became manager of the liquid products area.

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"Alfol" Plant for Germany

A petrochemical plant to make "Alfol" high molecular straight chain alcohols will be built near Hamburg, Germany, in a joint venture by Continental Oil Co., Houston, Tex., and Deutsche Erdoel A. G. (DEA), Hamburg. The two companies have already formed a new organization to be known as CONDEA Petrochemie G. m. b. H., with headquarters in Hamburg, which will operate the plant and sell its products in the European Common Market countries. Announcement of these developments was made last month by L. F. Collum, president of Continental and Gunther Schlicht, president of DEA.

Scheduled for completion in 1963, the German plant will have an annual capacity of 50,000 tons, about equal to that of Continental's Lake Charles "Alfol" plant which is set for completion this year.

The "Alfol" process, developed by Continental, yields petroleum derived materials for the manufacture of detergents and emulsifiers, previously obtainable only from natural sources.

Packaging Show

(*From Page* 113)

two panel sessions. The theme of these sessions is to be "The Profiles of Packaging." Panel #1 was to cover "Package Engineering and Production," and Panel #2 was to be devoted to "Package Distribution and Marketing." The Wednesday luncheon speaker, Erich Ibielski of Allgemeine Electricitaets-Gesellschaft, Frankfurt am Main, West Germany, was to report on "Package Developments Abroad."

Packaging Exposition was to be open to visitors from 10 a.m. to 6 p. m. on Monday and Wednesday; from 10 a.m. to 6 p.m. on Tuesday, and from 10 a.m. to 4 p.m. on Thursday.

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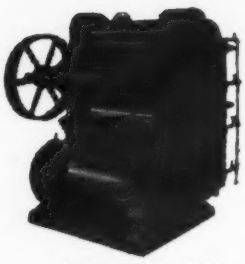

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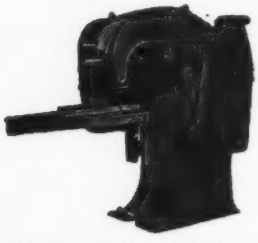

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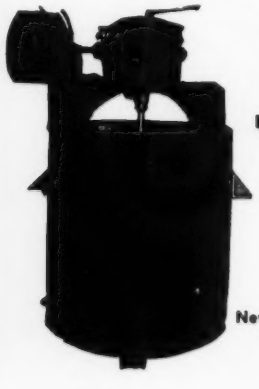

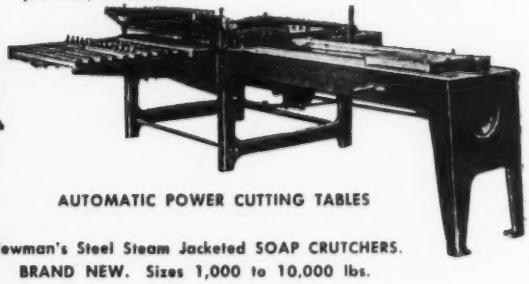

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(*Turn to Page* 191)

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Annual Review of Entomology Volume 6

Volume 6 of this series appeared in January 1961. The five previous volumes, which are still available, established the high standards of the Annual Review of Entomology.

Price to organizations and non-members: $7.00 per copy postpaid in the U. S. A., $7.50 per copy elsewhere.

Miscellaneous Publications of the Entomological Society of America

This new periodical contains timely and scholarly articles of 20 printed pages or more. The individual numbers appear at irregular intervals. Each volume will contain about 200 pages.

Volume 1, Number 1, pp. 1-32 appeared October 1, 1959, and contains the symposium papers on Insecticide Resistance in Arthropods of Medical and Veterinary Importance given at the Salt Lake City meeting in December 1958. Authors H. F. Schoof, R. B. March, A. W. A. Brown, and Herbert Knutson. Single copy, $2.50.

Volume 1, Number 3, pp. 69-171 appeared July 27, 1960 and contains the following: "Swarming and Mating in Mosquitoes," by Erik Tetens Nielsen and James S. Haeger. "A Revision of the Genus *Chlaenius* Bonelli (Coleoptera, Carabidae) in North America," by Ross T. Bell. Single copy, $6.00.

Volume 2, Number 1, pp. 1-175 appeared October 19, 1960 and contains the 23 papers presented at the Symposium — Research Progress on Insect Resistance held at Washington, D. C., October 7 and 8, 1959. Single copy, $7.50.

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Washburn Appoints Spence

Appointment of Ted N. Spence as sales representative for southern California, Arizona, New Mexico and El Paso has just been announced by T. F. Washburn Co., Chicago. Mr. Spence headquarters at 1979 Sierra Madre Villa, Pasadena, Calif. He works directly under Tom Wade, Washburn's west coast regional manager, in a move, according to Nick G. Contos, Washburn sales manager, designed to bring faster, better and more frequent service to west coast area accounts by having Messrs. Wade and Spence closer at hand to customers.

—★—

Onyx Names Two

Onyx Chemical Corp., N. J., recently announced the appointment of Dr. Arnold Lada as district manager of the New York metropolitan area, and John C. Findlan as sales development director.

Dr. Lada, previously technical service director of the company, is responsible for all field sales activities of the company in the metropolitan area, and will direct the sales of Onyx's line of raw materials to industries in that area.

Mr. Findlan, previously sales manager of the industrial chemicals division of Geigy Chemical Corp., Ardsley, N. Y., will direct application and market development of Onyx's "Maprofix" series of alcohol sulfate detergent raw materials and "BTC" and "Ammonyx" series of cationic germicides and industrial processing intermediates in new industries.

—★—

Chemway Earnings Drop

Earnings per share for Chemway Corp., Wayne, N. J., in 1960, fell to 13 cents, as compared with 38 cents in 1959. Sales for the year were also down, $8,665,319, as compared with $8,820,426 in 1959. Net income in 1960 was reported at $159,105, down from the $435,313 listed in 1959.

—★—

New Hub States Catalog

A new 56 page, illustrated catalog of pesticides is now available from Hub States Chemical Co., Indianapolis, Ind. Bound in three sections; insecticides, rodenticides and weed killers, enabling the user to find specific chemicals with ease, the catalog also has suggested mixing and application information.

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Kroeger Shell Manager

John Kroeger was recently appointed sales manager, industrial chemicals division of Shell

John Kroeger

Chemical Co., New York. Mr. Kroeger, formerly ammonia department manager in San Francisco, succeeds W. Q. Mooney, who was recently appointed to the newly created post of manager, trade relations.

Mr. Kroeger joined Shell in 1947 as a salesman in the Chicago district office. He was named a district manager of industrial chemical sales in Newark, N. J., in 1957 and manager of the ammonia department in San Francisco in 1960.

—★—

Rohm & Haas to Build HQ

Plans to construct a 14 story office building at Sixth and Market Streets, Philadelphia, were announced recently by Rohm & Haas Co. The six million dollar structure will contain approximately 250,000 square feet of office space. It will house the firm's consolidated headquarters. The head office had been located at Washington Square since 1927, but, with the growth of R & H activities, it had overflowed into several adjacent buildings and to 1700 Walnut Street.

The Rohm & Haas building is scheduled to be the first structure in Philadelphia's Independence Mall Redevelopment Project.

Victor Advances Cooper

Appointment of Robert S. Cooper as supervisor of applications research was announced re-

Robert Cooper

cently by Victor Chemical Works, Chicago, a division of Stauffer Chemical Co., New York. Mr. Cooper, who joined Victor in 1951, was a research chemist in both the organic and applications research groups and has been acting supervisor of the applications laboratory.

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Lehn & Fink Appoints Two

Lehn & Fink Products Corp., New York, recently announced two new appointments in its new prod-

Cokeley

Lynch

ucts department. Bruce K. Cokeley has been named new products coordinator, replacing Robert Varian, recently appointed brand manager, and Lawrence J. Lynch, named market research coordinator, a newly created position.

Mr. Cokeley assists in the development, testing and market introduction of new consumer products. Before joining the firm in 1960, he was merchandising manager, product manager and more recently a member of the new products department of Bristol-Myers Co., of New York.

Mr. Lynch aids in the planing and direction of all market research activities related to both present and new consumer products sold in domestic markets. He has had more than 10 years of market research experience with consumer packaged products.

—★—

Rexall Reports Earnings

Net earnings for Rexall Drug & Chemical Co., Los Angeles, reached a new high during 1960, the ninth consecutive year of increased earnings, it was announced recently. Earnings for Rexall and its subsidiaries were $9,359,694, as compared with $8,753,191 during 1959, an increase of 6.9 per cent. Earnings per share amounted to $2.33, as compared with $2.30 for 1959. Net sales for 1960 were $242,557,169, as compared with $227,015,721 for the previous year, an increase of $15,541,448, or 6.8 per cent.

CSC West Coast Office

Commercial Solvents Corp., New York, recently announced the opening of its new west coast office at Agnew, Calif., the site of its west coast plant.

The new office will serve as headquarters for the sale of pharmaceutical, industrial and agricultural chemicals, and animal nutrition products. CSC's Agnew plant produces formaldehyde, pentaerythritol, metaldehyde and ethyl formate.

—★—

Stauffer Ups Van Laer

Jan Van Laer has joined the sales development and technical service department, industrial chemicals division, Stauffer Chemical Co., New York, it was announced recently. With Stauffer since 1950, Mr. Van Laer has for the past 10 years, been engaged in process development research at the firm's Chauncey, N. Y. laboratories. He will now be headquartered in Stauffer's New York offices.

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Fred Firmenich On Tour

Fred-Henri Firmenich, son of Dr. Roger Firmenich and grandson of Fred Firmenich, founder of

Fred Firmenich

Firmenich et Cie., Geneva, Switzerland, parent company of Firmenich, Inc., New York, recently began a 12 month visit to the United States. He is touring the Firmenich offices in New York, California, Chicago, Firmenich de Mexico, Mexico City, and Firmenich, Ltd., Toronto and Montreal, Canada, to study industrial problems as they relate to perfume and flavor interests.

Mr. Firmenich has spent some time working in each of the operational activities in Geneva, research, production, sales and international export. When he returns to Switzerland, he will attend *Imede* management development institute at Lausanne.

—★—

Stepan Appoints Two

Stepan Chemical Co., Northfield, Ill., recently announced the appointment of C. Bruce Brown and Ralph Fredrickson to its special projects group.

Mr. Brown, formerly executive vice-president of St. Paul Ammonia Products, Inc., St. Paul, Minn., has 29 years background in the chemical industry, including experience in design, construction, maintenance, operation, plant development, sales, purchasing, traffic and general management. He previously had been with Canadian Industries, Ltd., and Dominion Tar & Chemical Co., Ltd.

Dr. Fredrickson, a chemical engineer, was formerly director of engineering research for A. E. Staley Manufacturing Co., Decatur, Ill. Prior to that he had been with Minnesota and Ontario Paper Co., and E. I. du Pont de Nemours & Co., Wilmington, Del.

It was also announced that Dr. David B. Hatcher had resigned as executive vice-president. Dr. Hatcher stated he plans to remain in the chemical industry in non-competitive fields.

—★—

Johnson Names Lincoln

Arthur J. Lincoln has been named sales manager, household products, by S. C. Johnson & Son, Inc., Racine, Wis., in its Buffalo-Rochester district, it was announced recently. Mr. Lincoln, with offices at 290 Larkin St., succeeds Arthur A. Costantino, who now heads the company's New York office.

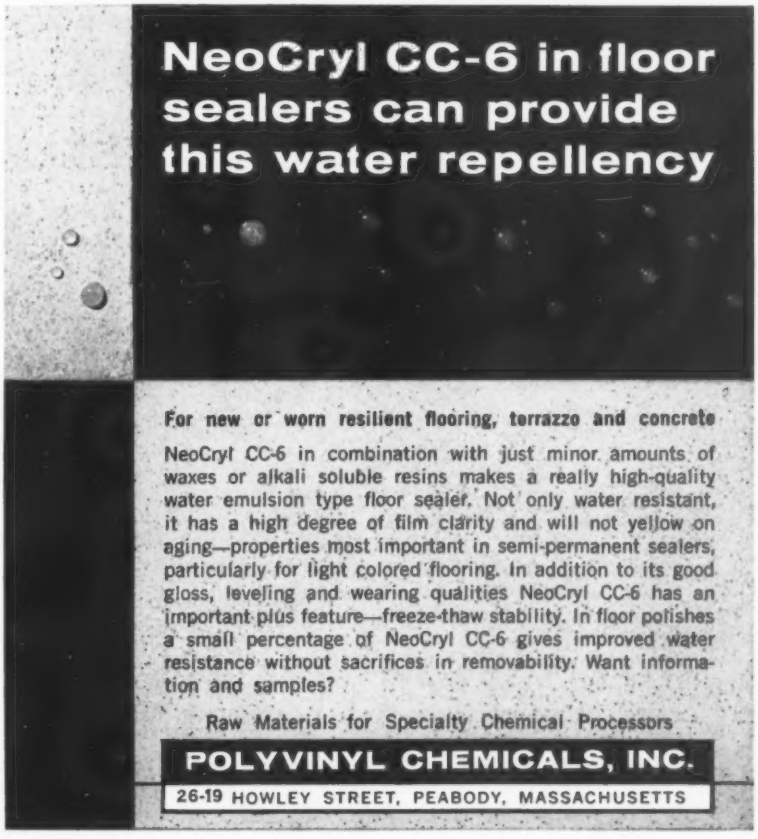
CIBS Award Winners

Dr. Martin M. Reiger, director of cosmetic development, and Dr. Stanley Brechner, senior chemist, both of Warner-Lambert Pharmaceutical Co., Morris Plains, N. J., have been named to receive the annual (CIBS) Cosmetic Industry Buyers and Suppliers' Association Award, it was announced recently. The authors of the most meritorious paper delivered at a meeting of the Scientific Section of the Toilet Goods Association during 1960, entitled, "Studies on the Adsorption of a Simple Dyestuff by Hair;" will accept the award at the Scientific Section luncheon of TGA, to be held May 11, 1961, in New York.

—★—

Bio-Search Moves

Bio-Search & Development Co., formerly located at 2019 West 71st Terrace, Kansas City 15, Mo., has moved to R.R. #1, Grandview, Mo., it was announced recently.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COMING MEETINGS

American Chemical Society, 140th national meeting, Chicago, Sept. 3-8.

American Oil Chemists' Society annual meeting, Sheraton-Jefferson Hotel, St. Louis, May 1-3, 1961; fall meeting, Pick-Congress Hotel, Chicago, Oct. 30-Nov. 1, 1961.

Canadian Manufacturers of Chemical Specialties Association, fourth annual meeting and conference, Royal York Hotel, Toronto, Oct. 30-Nov. 1.

Chemical Specialties Manufacturers Association, 47th midyear meeting, Drake Hotel, Chicago, May 15-17, 1961; 48th annual meeting, Roosevelt Hotel, New York, Dec. 4-6.

Chemical Specialties Manufacturers Association, Golf Tournament, Knollwood Country Club, Elmsford, N. Y., June 27.

Drug, Chemical and Allied Trades Association, annual meeting, Pocono Manor Inn, Pocono Manor, Pa., Sept. 14-17, 1961.

Manufacturing Chemists' Association, 89th annual meeting, The Greenbrier, White Sulphur Springs, W. Va., June 8-10.

National Chemical Exposition, Amphitheater, Chicago, Sept. 5-8, 1961.

National Agricultural Chemicals Association, annual meeting, Homestead, Hot Springs, Va., Oct. 29-Nov. 1.

National Hotel Exposition, Coliseum, New York, Nov. 6-9.

National Pest Control Association, annual convention, Deauville Hotel, Miami Beach, Fla., Oct. 16-19.

National Sanitary Supply Assn., 38th annual convention, and trade show, Conrad Hilton Hotel, Chicago, April 23-26, 1961.

New York Premium Show and Premium Advertising Conference, New York Coliseum, Sept. 25-28, 1961.

Packaging Institute, 23rd annual national packaging forum, Biltmore Hotel, New York, Oct. 18-20.

Packaging Machinery Manufacturers Institute, (PMMI) fourth annual show, Cobo Hall, Detroit, Nov. 7-10, 1961.

Society of Cosmetic Chemists, scientific meeting, Biltmore Hotel, New York, May 12; Chicago Chapter, monthly meetings at Henrici' Restaurant, Merchandise Mart, June 13; Sept. 12; Oct. 10; and Nov. 14.

Supermarket Institute, annual convention, McCormick Exposition Center, Chicago, May 7-10.

Synthetic Organic Chemical Manufacturers Association, monthly luncheon meetings, Roosevelt Hotel, New York, April 13; June 13; Sept. 12; Oct. 10; and Nov. 14; annual spring outing, Skytop, Pa., May 22-24.

Toilet Goods Association, 26th annual meeting, Waldorf-Astoria Hotel, New York, May 9-10, 1961; Scientific Section, May 11.

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* * * * *

The past few weeks have been busy ones for Ed Bush of Dragoco, Inc., Totowa, N. J., perfuming materials firm. Although he doesn't look old enough, Ed became a grandpappy on February 28, when his oldest daughter, Jean (Mrs. Richard Jordan, gave birth to a 7½ pound boy. Less than a month later, on March 25th, Ed's other daughter, Margaret Elwood Bush was married to Douglas Arthur Blackburn at Mountain Lakes, N. J., Community Church. Ed is the son of B. T. Bush, father of the U. S. aromatic chemical industry, now retired and living in Florida. Ed tells us his father and mother are leaving shortly on a round-the-world cruise. Ed's Uncle, Wally Bush is with Ungerer & Co., another perfuming materials outfit. Also in the perfuming materials field is Ed's brother, Burton T. (Tom) Bush, Jr., a member of the sales staff of Albert Verley & Co., Linden, N. J.

* * * * *

Twenty-one tons of "Cheer," P&G's blue detergent, were strewn through the streets of Denver recently when a truck carrying the load was ploughed into by a Union Pacific railroad train yclept, "Portland Rose." The headline on the story in the "Denver Post" read "'Rose' Comes Up Smelling Like Soap," which for our money is the headline of the month.

* * * * *

From Clarence L. Weirich, vice-president of C. B. Dolge Co., Westport, Conn., and raconteur par excellence, we learn of the most unusual salesman in the chemical specialties business. O. P. (for Perry) Holderby, a demon salesman who covers the midwest for Dolge, was shoveling his car out of a six foot snow drift, a few weeks ago, when he received a telegram from the home office. Perry had won a company sales contest, the prize for which was an all-expense paid trip to Jamaica for himself and his family. The boat sailed the following week. Perry's wire to the Dolge home office caused consternation and confusion, and a request for re-checking. It read, "Too busy to take the trip—stop—perhaps can find time during the summer."

When asked what his frost-bitten wife thought of his decision, Perry came up with the understatement of the year. She was very understanding, he replied, but not TOO enthusiastic about it.

We wonder what Jamaica is like in the summer.

Salesman Extraordinaire

* * * * *

Get Leonard Oppenheimer, secretary of West Chemical Products, Inc., Long Island City, N. Y., to tell you about the hair-raising experience he had in mid-March. Leonard was driving to his home in Woodmere, L. I., on the evening of March 19, when the accelerator of his car stuck. After careening through a red light, two stop signs and a vacant lot—at 80 m.p.h., Leonard and the car wound up in four feet of water in Jamaica Bay. Luckily the tide was out, or it would have been 10 feet of water. Although the car was smashed up, Leonard escaped with just a few bruises.

* * * * *

Millard (Bud) Fisher, head man at Click Chemical Co., Mount Vernon, N. Y., para-naphtha moth and deodorant block specialists, is back at his desk after being confined to the sidelines by illness for several months.

* * * * *

Look for several liquid bleach products bottled in linear polyethylene to go national early next month. These new bottles, which have been test marketed in several areas for the past several months have met with considerable success. One of the problems that is expected to be encountered is lack of ample blow molding facilities. The demand is reported to be overwhelming present facilities.

* * * * *

Good Car*Keeping Institute reminds us that the Good Car*Keeping observance, ordinarily held during a week in May, this year has been extended to include the entire month of May! On the bandwagon men!

* * * * *

We've long wondered why, apart from a possible aversion to the idea of being clean, Frenchmen use so little soap. The French consume about one-fourth the amount of toilet soap that the average American uses. A recent survey shows that only 10 per cent of French homes have bathtubs or showers. Only 60 per cent have water piped into the house—and of these, only 30 per cent have hot water. French soap makers and manufacturers of household plumbing supplied these statistics which were compiled by the housing ministry of France.

* * * * *

Not only is one of the doctors responsible for the development of "Permachem" germicide no longer connected with Columbia-Presbyterian Hospital in New York, where the stuff was tested, but the product is out of the hospital, too, we learn.

Enjoying the hospitality at the open house festivities marking the formal opening last month of the new quarters of Dodge & Olcott, Inc., 79 Ninth Ave., New York City, are, left to right: Gus Schwindeman, D&O senior perfumer; Pearl Zulka of Avon Products, Inc.; Charles Rowell, Walgreen Laboratories; Alice Ackerman, Avon; James D. MacNair, "Soap & Chemical Specialties"; Kay Colton, Morningstar-Paisley, and Frank J. Reilly, "Soap & Chemical Specialties."